THE Soybean Digest

Photo by David B. Bramson

Joe Givens makes pancakes at Dawson, Minn., soybean day.

A $367 Million Export Market!

(In 17 Countries Visited)

MAY • 1960

VOLUME 20 • NUMBER 7

quality

SPECIFY NEW, IMPROVED PENOLA HEXANE for best results in your processing.

- Penola offers high quality Hexane for use in high quality products!
- Penola Hexane is now debenzenized!
- Penola Hexane is backed by the nation's largest petroleum research laboratory and refining facilities . . . sold by one of the oldest marketers in the U. S.

The Penola name is your guarantee of . . .

• QUALITY • TECHNICAL ASSISTANCE
• PURITY • FAST DELIVERY

For information or ordering, just contact your nearest Penola office or write . . . Penola Oil Company, 15 W. 51st St., New York 19, N. Y.

PENOLA OIL COMPANY NEW YORK • DETROIT • CHICAGO

Penola

THE Soybean Digest

REG. U. S. PAT. OFF.

Official Publication of American Soybean Association and Soybean Council of America, Inc.

HUDSON, IOWA

Vol. 20 | May, 1960 | No. 7

IN THIS ISSUE

Editor's Desk 4
GEO. M. STRAYER
Market Expansion Challenges Oil Millers 6
Search for New Noncompetitive Crops 6
F. R. EARLE
Cooperative Exporting of Grains and Oilseeds 7
S. M. ALCONE
Flash Desolventizing of Hexane and Alcohol Extracted Soy Flakes 7
G. C. MUSTAKAS
The Fats and Oils Export Situation 8
WALTER W. SIKES
The News in Brief 13
More Rows for More Beans 16
Symposium on Soybean Nutrition 17
Soybean Varieties and Nutrition 17
HERBERT W. JOHNSON, JACKSON L. CARTTER AND EDGAR E. HARTWIG
Physiological Comparisons of Soybeans and Corn 17
ROBERT W. HOWELL
Trace Elements in Soybean Production 18
P. H. REID, E. J. KAMPRATH AND H. J. EVANS
Iron Chlorosis as an Indicator 18
J. C. BROWN, L. O. TIFFIN, AND R. S. HOLMES
Minnesota Soybean Meetings 19
The Cover Picture 19
Nematode-Fungus Team Is Destructive 19
New French Extractor at Estill 20
Japanese American Soybean Institute 26
A Visit to Leading Tofu Factory 26
SHIZUKA HAYASHI
Soybean Council of America, Inc. 28
$367 Million Exports in 17 Nations 28
American Soybean Association 29
Joint Meetings in Memphis 29
Publications 30
April Markets 32
Grits and Flakes 34
New Products and Services 36
Washington Digest 38
PORTER M. HEDGE
Market Street 39
In the Markets 40

LATE NEWS

(Sample Copy Sent on Request)

LATE NEWS, published 32 times a year in between issues of THE DIGEST, brings you the very latest information on crop movement, planting, Washington legislation and the market outlook. It is mailed to you via **First Class** to reach you at the earliest possible date, or you may have it sent via **Air Mail.**

Keep ahead of the parade—Only $7.50 will start LATE NEWS coming your way this week.

Mail your remittance to: American Soybean Ass'n, Hudson, Iowa

THE SOYBEAN DIGEST

EDITOR.....*Geo. M. Strayer*

MANAGING EDITOR.....*Kent Pellett*

BUSINESS MANAGER.....*Geo. McCulley*

CIRCULATION MANAGER
David B. Bramson

OFFICES
Business, publication and circulation, Hudson, Iowa. TAylor 5-3296.

Advertising, Ewing Hutchison Co., 35 E. Wacker Drive, Chicago 1, Ill., ANdover 3-3042.

Published on the 10th of each month at Hudson, Iowa, by the American Soybean Association. Entered as second class matter Nov. 20, 1940, at the post office at Hudson, Iowa, under the Act of Mar. 3, 1879.

Forms close on 20th of month preceding.

Subscription rates—$3 per year; Canada and other members of the Pan American Union, $3.50, other foreign, $4. Single copies 30c. Subscriptions accepted from members only.

Refer all address changes, undeliverable copies and subscriptions to the Soybean Digest, Hudson, Iowa.

THE AMERICAN SOYBEAN ASSOCIATION

EXECUTIVE OFFICES: *Hudson, Iowa*
PHONE: *TAylor 5-3296*

CABLE ADDRESS:
Agriport, Hudson, Iowa

PRESIDENT
C. G. Simcox, Assumption, Ill.

VICE PRESIDENT
C. V. Simpson, Waterville, Minn.

EXECUTIVE VICE PRESIDENT AND SECRETARY-TREASURER
Geo. M. Strayer, Hudson, Iowa

ASSISTANT TO THE EXECUTIVE VICE PRESIDENT *David R. Farlow*

DIRECTORS: Jake Hartz, Jr., Stuttgart, Ark.; C. G. Simcox, Assumption, Ill.; Hubert W. Baker, Dalton City, Ill.; John H. Butterfield, Pana, Ill.; Ersel Walley, Fort Wayne, Ind.; Chester B. Biddle, Remington, Ind.; Geo. M. Strayer, Hudson, Iowa; Howard L. Roach, Plainfield, Iowa; Harry Gatton, Jr., Rumsey, Ky.; Walter M. Scott, Jr., Talullah, La.; John W. Evans, Montevideo, Minn.; Charles V. Simpson, Waterville, Minn.; Glen Myers, Memphis, Mo.; O. H. Acom, Wardell, Mo.; John Sawyer, London, Ohio; David G. Wing, Mechanicsburg, Ohio; W. M. Wallace, Woodslee, Ontario, Canada.

Objectives of the American Soybean Association include the bringing together of all persons interested in the production, distribution and utilization of soybeans; the collection and dissemination of the best available information relating to both the practical and scientific phases of the problems of increased yields coupled with lessened costs; the safeguarding of production against diseases and insect pests; the promotion of the development of new varieties; the encouragement of the interest of federal and state governments and experiment stations; and the rendering of all possible services to the members of the Association.

EDITOR'S DESK

. . . By GEO. M. STRAYER

ETERNAL WATCHFULNESS IS NEEDED Efforts of ASA and manufacturers of isolated soy protein to convince the Senate finance committee that the duty which prevailed on imported supplies of industrial casein for over 20 years and which was suspended 3 years ago should again be instituted were to no avail. After first continuing the suspension for only 3 months, the Senate finance committee tacked an amendment on another finance bill to continue the suspension for the remainder of the 3 years.

Senator Byrd of the Senate finance committee is to be commended on his willingness to hold hearings after the bill had progressed through most of the normal stages of passage. Senator Vance Hartke of Indiana is to be commended on his leadership, courage and insistence that the soybean side of the story be told. Senators Hickenlooper and Humphrey aided materially.

The bill carrying the amendment now goes back to the House of Representatives. Attempts will be made to stop the amendment there. But probabilities are we will have to watch carefully such legislation and be sure that we are not again caught unaware when such bills are up before the House, where they must originate.

Significant in the passage of the amendment in the Senate is the fact that the member of the Senate finance committee who pushed hardest for the amendment is a paint manufacturer—and user of cheap imported casein. When business interests and statesmanship get mixed up, statesmanship usually loses.

DON'T OVERPLANT SOYBEANS Exports of soybeans are holding their margin above last year's figures (see Washington Digest). The crush is down slightly from last year. If present trends continue, total disappearance of soybeans will be greater than a year ago. With a smaller crop in 1959 it now appears that carryover stocks will be well below those of a year ago. There is still some question in the minds of many people in the industry pertaining to the accuracy of the 1959-crop figures. It is my personal belief that yields may have been overestimated and that the bushelage predicted will never show up in the markets. The final answer will not be known until fall.

As is always the case, weather conditions to date are widely variable. A summary would indicate later than normal season, some small grain never seeded, a probable increase in corn acreage, and if the weather for corn planting is not favorable, a sizable increase in soybean acreage over the Mar. 1 planting intentions report. Much of the cotton country is in the same situation.

Late planted soybeans do not bring bushels in proportion to acres, however. Yields are normally lower, there is some abandonment, weed control is poor, and the crop does not add up as fast as it would appear.

Let's not overplay acreage increases on soybeans this year. If we can keep acreage from increasing too fast we can build markets at home and abroad and can continue to maintain a sound soybean industry.

RESERVATIONS CAN BE MADE NOW The 40th annual convention of the American Soybean Association will be held at the Hotel Peabody in Memphis, Tenn., on Aug. 22 and 23. Program plans are progressing in excellent shape, and will be available in coming issues. Basically the two forenoon sessions will be devoted solely to producer problems and interests, and the two afternoon sessions will be joint sessions with the Naitonal Soybean Processors Association, and will be of a nature that interests both groups.

This will be a new departure in convention planning for ASA. Time will tell how it works out. Because of the combined groups it will be possible to secure speakers not otherwise available. Sincere effort will be made to place a summary of the National Soybean Crop Improvement Council program highlights before the convention.

Make your hotel reservations with the Peabody Hotel now. A block of rooms is reserved for us, so tell the hotel you will be attending our convention and they will have accommodations for you. Since the meetings start bright and early on Monday morning you will want to make your reservations starting on Sunday night, Aug. 21.

Left to right: Mr. R. O. Denman, Gen. Mgr. of Southern Soya, Inc.; Mr. R. P. Hutchins, Tech. Dir. of FOMMCo.; Mr. C. B. Upton, V.P. and Gen. Mgr. of FOMMCo., and inventor of the STATIONARY BASKET EXTRACTOR; Mr. Stiles Harper and Mr. Grover Bowers, owners of Southern Soya, Inc.

FRENCH STATIONARY BASKET EXTRACTOR

The French Stationary Basket Extractor, a revolutionary new design, has produced outstanding results at Southern Soya, Inc., Estill, South Carolina. This installation—first of its kind—is producing extracted meal of under .5% oil, with a solvent loss of less than a gallon per ton, at over the rated capacity of 150 tons.

In this method of extraction, both the flakes and the major machine parts remain stationary throughout the extraction cycle. Result? Complete miscella filtration as part of the extraction cycle, as well as drastic reduction in bearing loads and power requirements.

The French Stationary Basket Extractor is designed to process all types of oil seeds. Write for the money-saving details contained in Bulletin No. 08-30A. Our engineering staff will be happy to make suggestions on solving your extraction problems.

REPRESENTATIVES

MR. TOM R. BROOKE
146 E. 17th Street, N.E.
Atlanta 9, Georgia

MR. DEAN K. BREDESON
4778 Normandy Avenue
Memphis 17, Tennessee

MR. L. E. MATTHEWS
17612 Riverside Dr.
Lakewood 7, Ohio

MR. D. R. BOWMAN
1601 Minter Lane
Abilene, Texas

EXPORT

M. NEUMUNZ & SON, INC.
90 West Street
New York 6, New York

MR. A. GONZALES FLORES
Desarrollo Industrial
Beristain 41, Mexico 8, D.F.

THE FRENCH OIL MILL MACHINERY CO.
PIQUA, OHIO—U.S.A.

- MECHANICAL SCREW PRESSES
- COOKER-DRYERS
- SOLVENT EXTRACTION PLANTS
- FLAKING AND CRUSHING ROLLS

F032

Market Expansion Challenges Oil Millers

MARKETING U. S. soybean oil and meal, especially in foreign countries, was one of the primary subjects of interest at the joint conference of soybean and cottonseed oil millers at the Department of Agriculture's utilization laboratory in Peoria, Ill., in March.

"It seems the United States will be the chief source of a continuous supply of oils and oilseed products for a long, long time to come," Walter W. Sikes of USDA's Foreign Agricultural Service told the more than 65 oil millers. He also advised the group that market expansion for U. S. agricultural products "should be a challenging field for all of you." (See his report on page 8.)

And the millers acted. Cottonseed millers, for the first time, joined soybean processors in a committee to investigate the possibilities of establishing an organization to operate in foreign markets. The consensus was that European buyers want to deal with a group who will supply quality products.

The soybean people agreed that improvement in quality of beans, oil, and possibly meal would help expand and keep foreign markets. New outlets for oil appear the most urgent. Increases in meal usage in America and Europe are forecast. Last year 500,000 tons of meal were exported.

DAN H. McVEY, Farmer Cooperative Service, U. S. Department of Agriculture; Geo. M. Strayer, American Soybean Association, Hudson, Iowa; and J. C. Givens, Tri-County Co-op Processing Association, Dawson, Minn., discuss some soybean processing economics at the recent oil millers joint conference. Mr. McVey was a session chairman.

Interest in export was further stimulated by George Strayer's discussion of the export program of the American Soybean Association and the Soybean Council of America and Dr. A. K. Smith's report of the Northern Division's research on U. S. soybeans in Japanese foods. (The Soybean Digest reported this research in February.)

In welcoming the group to the Northern Division and acting as chairman of the soybean session F. R. Senti, director, pointed out that cereals and oilseeds are under study at the Peoria laboratory with emphasis on finding new industrial uses for crops that are in surplus supply.

Dr. Senti said encouraging results have come from research on vinyl ether coatings for metals from soybean and linseed oils; in reacting ozone with each of the two oils to produce new chemicals; and in the development of emulsion paints from linseed oil. He discussed two areas of research in utilization of soybeans in food products: the research on U. S. soybeans in Japanese foods and continuing studies to improve the flavor stability of soybean oil used in cooking and salad oils.

This 6th annual conference was sponsored by the Northern and Southern Utilization Research and Development Divisions of the Agricultural Research Service and by the Farmer Cooperative Service of USDA.

Northern Division research reports on potential new oilseed crops were made by F. R. Earle; oil quality by C. D. Evans; soybean protein by W. J. Wolf; flash desolventizing of soybean flakes by G. C. Mustakas; and on vinyl ether coatings for metals by L. E. Gast. Color in cottonseed oil and nutritive value of cottonseed meal by V. L. Frampton and new products from cottonseed oil by R. O. Feuge were Southern Division reports.

Some of the papers presented at the conference follow here and on page 7.

GLENN POGELER of the North Iowa Cooperative Processing Association, Mason City; F. R. Earle, Northern Utilization Research and Development Division, Peoria, Ill.; and E. J. Cecil of Ranchers' Cotton Oil, Fresno, Calif., discuss research conducted in the new crops screening program at the Northern Division. Mr. Earle reviewed the USDA search for new seed oils at the conference of oil millers in Peoria.

Search for New Noncompetitive Oilseed Crops

By F. R. EARLE
Northern Utilization Research and Development Division, Peoria, Ill.

OUR SEARCH for new industrial oilseeds is part of a larger program —a general search for new crops that will not compete in the market with those now available. There are several reasons for the search:

We do not want new oils that would compete with soybean or cottonseed oil. Rather, we are looking for unique fatty acids that can serve purposes not served by present oils. To this end we have analyzed seed oils from over 250 species of plants by chemical methods that will indicate the composition of most simple oils and detect any unusual composition.

The new crops field of exploration is enormous. There are 250,000 to 300,000 species of higher plants in the world. About 90 are raised in the United States in quantities worth over $1 million a year, and only 200-300 are raised as commercial crops. At the same time, little is known about the chemical composition of the plant kingdom.

Initially, we are interested in plant components other than starch, suitable for large volume uses.

In our screening for oilseeds, fatty acids of special interest to us are those that differ from the acids in commercial oilseeds of domestic origin in chain length, in degree or location of unsaturation, or in func-

tional groups along the carbon chain. We have already discovered a number of oils in these classes.

Short-chain acids, primarily with 10-carbon chains, have been found in two new sources, the sassafras tree and *Cuphea llavea*, a member of the loosestrife family. We can hardly imagine growing sassafras for seed, but *Cuphea llavea* is an annual herb and has numerous herbaceous relatives. The C_{10} acids should be evaluated for use in detergents and in high temperature synthetic lubricants.

Long-chain acids, currently available only in rape and mustard seed oils, have been found in other mustard relatives and in *Limnanthes douglasii* (meadowfoam). Some of the mustard family grow well in our northern areas, and some of their oils contain as much as 50% or 60% erucic acid (C_{22}).

Oil from *L. douglasii* is unique among the fatty oils in that 95% of the fatty acids present are longer than the C_{18} acids of the common oils. The principal acid contains 20 carbon atoms, and most of the remainder contain 22. Most of the industrial use of rapeseed oil has been as a lubricant. Investigation of possible uses for long-chain acids has been assigned to the Northern Division.

Oils from seeds of the carrot family *(Umbelliferae)* contain petroselinic acid. This is similar to oleic acid, but the double bond in the molecule is in a different position. When the acid is split by ozonolysis (a commercial process now with oleic acid), the products are adipic and lauric acids, both useful commercial chemicals. Study of the petroselinic acid oils is in progress at the Southern Division.

One of the oils with an unusual functional group is that from *Vernonia anthelmintica*, an ironweed from India. It is a naturally epoxidized oil somewhat similar to those prepared commercially by chemical treatment. The properties of this oil and its possible advantages for specific applications are being studied by the Eastern Division.

Perhaps the most interesting discovery of the screening program is an acid containing both a hydroxyl group and two conjugated double bonds. The combination of these two reactive groups is unique, and the possibility of forming useful chemical derivatives with unique properties is most intriguing. Sixty percent of the oil in *Dimorphotheca aurantiaca*, the cape marigold, contains this new acid. The Western Division is now evaluating this oil.

In the screening program, many oils are found to have unidentified components. From among these we have discovered and determined the structure of five fatty acids previously unknown. These include three from *Limnanthes*, one from *Dimorphotheca*, and one from *Chrysanthemum coronarium*. The evaluation studies mentioned above will include all five of these acids or very similar relatives. Additional unknown acids are being studied to establish their composition and structure prior to estimating their potential industrial value.

Cooperative Exporting of Grains and Oilseeds

By S. M. ALCONE
General Manager, Producers' Export Co., New York City

THE COOPERATIVES' entrance into the export field was very carefully investigated, planned and thought out. As early as 1948, members of the National Federation of Grain Cooperatives began discussions on the subject.

During the next 10 years, many studies were made here and also in the foreign markets by the individual cooperatives, as well as by the committee especially set up for that purpose by the National Federation.

Finally, on June 19, 1958, a committee representing 19 major regional grain cooperatives met in Amarillo, Tex., and formally organized Producers' Export Co., with headquarters to be located in New York.

Producers' Export Co. began its operations on Oct. 15, 1958, with myself as general manager, assisted by a staff with long experience in the export of grain.

In organizing Producers' Export Co., the cooperatives of course knew that, in order to obtain a share of the business, they would have to compete against long-established grain export firms with their worldwide organization, great financial resources and many years of experience, and were prepared to operate at a loss for the first few years.

However, much to everybody's surprise, Producers' Export Co. began making sales from the start and has been operating in the black ever since.

During the 16 months of its existence, Producers' Export Co. has exported about 45 million bushels of various grains and soybeans, amounting to some $75 million.

Through their sales organization here and overseas, the grain originated by the participating cooperatives was sold to countries all over the world—in Europe, Asia and Africa. The grain was shipped through various ports—Philadelphia, Baltimore, New Orleans, Mobile, Houston, Galveston, Corpus Christi, Portland and Seattle, as well as Chicago and Toledo—by using port elevators, both public and cooperative-owned.

In the short time of its existence, Producers' Export Co. has built a solid foundation on which to expand future operations, but the most important accomplishment is that it has found export markets for the grain originated by the participating cooperatives, which now number 22.

Flash Desolventizing of Hexane and Alcohol Extracted Soy Flakes

By G. C. MUSTAKAS
Northern Utilization Research and Development Division, Peoria, Ill.

FLASH DESOLVENTIZING is a process for removing organic solvents from solids in a closed, vapor system. This process, applied to soybean oil meal, preserves the original undenatured state of the protein to a high degree. In this system, extracted solids are desolventized by being suspended in a superheated vapor stream and heated to a temperature above the condensation point. The vapor stream consists of the same vapor that is associated with the solids. Solid material is maintained in suspension for only a few seconds when it is effectively desolventized.

In hexane-desolventizing experiments relatively little to no protein denaturation occurred when discharge flake temperatures were maintained at 160°-190° F. Residual solvent content of the product at these temperatures was less than 0.5%. The desolventizing system is simple, low in cost, and should be useful in any process that requires the rapid removal of solvent from residual solids where heat sensitive constituents are present.

The Fats and Oils Export Situation

"One of the Bright Spots"

from Mr. Sikes' Speech Before the Cooperative Oil Mill Conference

By WALTER W. SIKES
Director, Fats and Oils Division, FAS, USDA
Washington, D. C.

THE EXPORT situation for fats and oils has been one of the bright spots in the agricultural picture. This current marketing year exports will set a new record. Although record exports do not by any means mark the end of our fats and oils problems, our big overseas shipments are highly encouraging. Demand for our oilseed products in foreign countries has grown steadily. The momentum is there and we hope, through our market development programs, to maintain the forward motion already set up.

In a discussion of market development one must refer to Title I, Public Law 480. As you may know, P. L. 480 is the legislation through which we sell U. S. surplus commodities for foreign currencies. These foreign currencies are put to many uses by this country. One is maintaining and developing markets for U. S. agricultural products. I want to talk about market development, with special reference to soybeans and oilseed products.

There can well be certain misconceptions about developing markets for U. S. products. First of all there are not "starving millions" as some public remarks would lead us to believe. "Under nutrition" certainly, but in recent years there has been no evidence of widespread starvation anywhere in the world. So there is not an enormous and avid appetite just waiting to be served with a minimum effort on the part of the U. S. trade. Even in the less developed countries agriculture is the leading occupation of the people and they tend to resist the competition of massive imports. Trade barriers still exist. Processing technology still creates great problems in many areas.

Market development work will furnish the answers to many of the problems that exist now due to technical difficulties, food habits and customs and trade barriers. A recent global agreement on market development activity has been signed by FAS and the Soybean Council of America.

With respect to funds, the worldwide market development activity in which we are now engaged is indeed a mutual undertaking. We, and the Council, give freely of our time and physical effort. FAS puts into the global project a large sum of foreign currency; the Council puts in a large sum in U. S. dollars. In addition, the Council will attempt to secure what we call a "third party Cooperator" representing the trade in the foreign country where a country project is started. This "third party Cooperator" will be called on to make a contract with the Council, a contract involving the contribution of both time and money by the third party. All parties to this mutual market undertaking are required to put in *muscle and money* and where there is reluctance to make both contributions, the joint project should best be left undone.

Need Market Work

While soybeans and oilseed products are not comparable in supply to the recognized surplus in wheat and corn, a look at supply and sale figures spell out the necessity for market development in this field. Let's look at the situation:

World production of fats and oils in 1960 is tentatively forecast at an alltime high of 34.2 million short tons. This would be 1% above the 1959 record and almost one-third more than the estimated 1950-54 average outturn.

The major increase will be in animal fats, mainly in the United States although more also will be produced in Western Europe. Somewhat more marine oils will come from the Antarctic and output of the industrial oils, mainly linseed in Argentina, will be higher. About the same quantity of coconut and other palm oils will be available and little change in production of the edible vegetable oils is expected. However, the United States will account for a larger percentage of edible oil production because output in this country will rise while corresponding production is down in China, West Africa, India, Canada and the USSR. Production of olive oil in the Mediterranean Basin also will be greater.

U. S. Situation

The United States situation is this: Supplies of food fats and oils for the marketing year which began Oct. 1, 1959, are placed at a record 14.3 billion pounds (including the oil equivalent of carryin stocks of oilseeds), or 5% more than the previous high which was established last year. Nearly all of the increase is in cottonseed and soybean oils although output of lard also will be up somewhat. While domestic disappearance is expected to rise, the increase will be relatively small and larger supplies are available for export. Exports in 1959-60 are expected to increase substantially over the year before and stocks (including the oil equivalent of soybeans) on Sept. 30, 1960, the end of the current marketing year, are not likely to differ greatly from the year before. Most of the rise in exports will be in soybeans and lard.

Although there may be times when the United States will have difficulty in moving large quantities of oilseeds and oilseed products, in the long run exports are likely to go up substantially with a determined sales effort by the U. S. trade. This would also reflect increasing consumption in importing areas resulting from rising populations and income.

Exportable supplies from other countries probably will not increase

commensurately with the expected expansion in world import demand. Many of our current competitors in the export market are underdeveloped areas and it is quite likely that alternative uses for their resources will be brighter than will the opportunities for producing and exporting oilseeds. In addition, consumption is expected to rise substantially in these countries because in many of them population and incomes are likely to increase and present levels of consumption are low. Thus, more of their production would tend to remain at home.

The Middle East and some Latin American countries (where per capita consumption is low) are potentially good markets for U. S. edible oils.

1960 Soybean Exports

Present estimates are that 125 million bushels of soybeans will move to foreign buyers between Oct. 1, 1959, and Sept. 30, 1960. This compares with about 110 million bushels last year. We expect Europe to take 10-15 million bushels more than last year's 46 million. We believe that of this total West Germany and the Netherlands will take about 5 million more than last year's 29 million. The rest of Europe will be up about 7 million from the 17 million of a year ago. In 1958-59, Canada took about 15 million and we expect about 15 or 16 million to go this year. About 40 million should go to Japan versus last year's 37 million. We expect little change in quantities going to all other countries. Last year these "other countries" took about 12 million bushels.

We estimate the export movement of cottonseed oil and soybean oil will be no less than last year's 1.3 billion pounds.

We believe approximately 650-750 million pounds of vegetable oil will go to Europe, about 65 million to Canada, 55 million to Central America, 90 million to South America, over 100 million to Africa and 375 million to Asia. Roughly, this is about the same amount of vegetable oil exported last year between Oct. 1, 1958, and Sept. 30, 1959. Please appreciate that these figures are indeed estimates. One large buying country could shift its buying to either before or after Sept. 30, 1960, and cause a drastic change in the picture from a market year statistical position. We estimate domestic consumption for the two oils will move up slightly.

Even if all this happens, however, we have by no means accounted for all the supply of oil and oil equivalent in beans. We are left with considerable quantities of oil or beans for further export or crushing as the case may be.

Markets must be developed and though this view may be somewhat prejudiced, I conceive of no better use of some of our foreign funds than to use them jointly with the U. S. trade, in developing overseas markets.

Who can truly foresee what these mutual marketing efforts will bring forth? When told that this country or that country will never be a commercial market for our products and that P. L. 480 market development work will never be fruitful, I think of Japan, Germany and Austria and the great dollar market these nations have become; of Italy where per capita consumption was built up during a period when Italy was receiving P. L. 480 oil, but which has now become a dollar market for oilseeds and oilseed products at an even higher consumption level. I have a firm faith that the money that FAS is spending in market development work is well spent. I confess this faith is fortified as I see experienced, and may I say in a complimentary sense, "hardened" U. S. trade interests contributing hard American dollars to this mutual undertaking.

Broilers Gain More On Vegetable Oils

EVALUATION of the metabolizable energy of vegetable oil and tallow, two widely used ingredients in broiler rations, shows that vegetable oils will give 4.5% more gain per pound of feed than tallow, Dr. Lawrence M. Potter, research assistant in poultry science at the Storrs Agricultural Experiment Station of the University of Connecticut, reports.

Dr. Potter, as a part of his continuing studies to establish an index of metabolizable energy of various poultry feed ingredients, has established the energy levels of corn oil and tallow.

Corn oil, he found, contains 3,906 metabolizable calories per pound. Tallow, on the other hand, contains only 3,076 metabolizable calories per pound. Dr. Potter obtained his 4.5% increase when comparing rations containing 10% fat.

It has been generally assumed that all fat gives approximately the same level of nutritional value to feeds.

INOCULATE SOY BEANS

with

IT PAYS!

The Urbana Laboratories

Urbana, Illinois

All over the Heart-Land of America...

Eighteen Butler Giant Bins, 21 x 32 ft., with a capacity of approximately 172,800 bushels in Montana.

Fourteen Butler Giant Bins, 21 x 32 ft., provide approximately 134,400 bushels of safe storage at this installation in North Dakota.

Eight 24' x 24' Butler Giant Bins store nearly 80,000 bushels of grain in Missouri.

BUTLER GIANT BINS

CUT GRAIN STORAGE COSTS

Here are some of the reasons why . . .

BIG VOLUME STORAGE . . . models up to 36 feet in diameter, as high as 40 feet at the eave. The biggest Butler Giant Bin holds over 36,000 bushels!

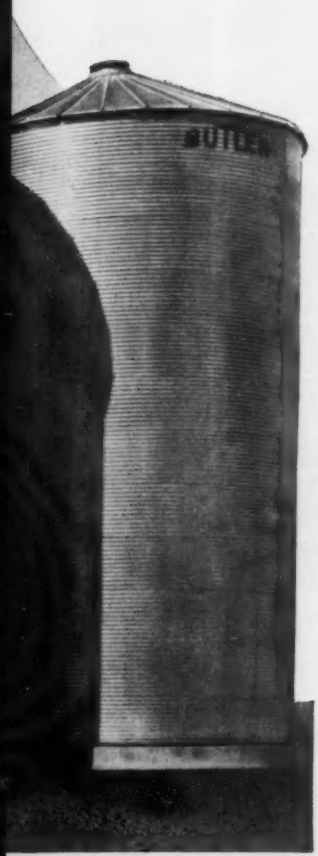
LOWEST-COST SAFE STORAGE . . . grain is safe from moisture and infestation at a cost-per-bushel no other bin storage can better.

EASY TO MAINTAIN . . . aeration, fumigation and cleaning are simple in a Butler Giant Bin. Automatic handling equipment available on any size.

WIDE RANGE OF SIZES . . . lets owners tailor storage to fit specific needs, makes it easy to segregate, condition and store various types and grades of grain.

BETTER BUTLER CONSTRUCTION . . . designed and built of extra-heavy galvanized steel for safest storage, longest life. The strongest in the grain bin industry.

Do you need big, low-cost grain storage? Get full details on Butler Giant Bins and how they can save *you* money. Your nearest Butler Dealer, Butler Builder or Butler Contractor will be glad to help . . . or, if you'd rather, write direct.



Diameter	18	21	21	24	24	24	24	24	24	27	27	27	36	36	36
Height (eave)	16'	18'8"	32'	16'	18'8"	21'4"	24'	32'	40'	24'	32'	40'	24'	32'	40'
Capacity* (bushels)	3,600	5,700	9,600	6,700	7,700	8,700	9,700	12,700	15,700	12,400	16,300	20,105	22,700	29,600	36,400

*** Maximum capacity is determined by adding grain compaction factor, based on 60# wheat or beans to cubic measure, and filling under roof above eave. Compaction factor will vary by test weight, type of grain, and depth of grain stored.**

BUTLER

BUTLER MANUFACTURING COMPANY

Dept. 461, P. O. Box 7027, 1020 East 63rd Street, Kansas City, Missouri
961 Sixth Avenue, S. E. Minneapolis 14, Minnesota
931 Avenue W, Ensley, Birmingham 8, Alabama
Dept. 61, 2710 Butler Avenue, Richmond 1, California

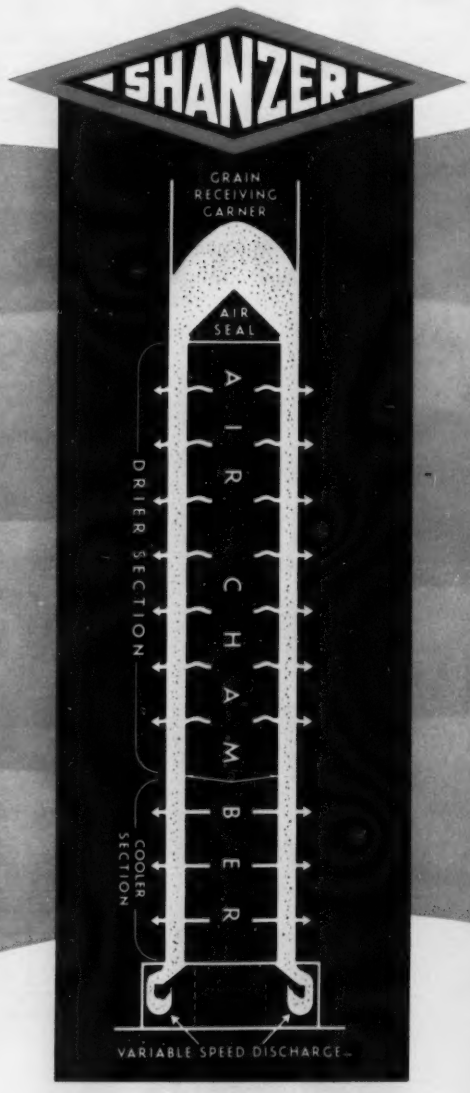
Manufacturers of Equipment for Farming, Oil Transportation, Outdoor Advertising • Metal Buildings • Contract Manufacturing

NOW FROM SHANZER ENGINEERING RESEARCH

The Thirtieth Anniversary Thermo-Flo Drier*

A New Standard of Grain Drier Performance with Model for Model Capacity Increases Up 40% or More**

Yet No Increase in Price



Wherever grain is dried, the name Shanzer is known for performance and dependability.

Now, from the originators of famous screen column design, comes Shanzer's all new *Thirtieth Anniversary Line*. Every new drier bearing the Shanzer name incorporates proven screen column efficiency plus the remarkable *Thermo-Flo* principle for truly spectacular bushels-per-hour drying preformance.

**In months of engineering and field testing, under all types of conditions and with a wide variety of grains, the new Shanzer *Thermo-Flo* Driers have proved to be one of the most significant performance advances in more than two decades of drier machinery development. By every gauge and comparison – unit size, price range, quoted ratings – Shanzer's new *Thermo-Flo* Driers consistently delivered striking increases in capacity, 40% or more, over previously acknowledged industry "bests."

To the owner and operator of grain drying machinery, this is like getting "twice" the drier for every dollar invested.

You are invited to learn first hand all the exciting details on Shanzer's *Thirtieth Anniversary Thermo-Flo Line*. Contact your Shanzer representative or write to our home office address shown below.

*Trademark

Go with Shanzer in the Sixties

SHANZER MANUFACTURING COMPANY

Designers and manufacturers of stationary and portable Grain Driers, Bucket Elevators, Conveyors, Aspirating Cleaners and Manlift Elevators

85 Bluxome Street • San Francisco 7, California • Phone SUtter 1-5200

THE NEWS IN BRIEF

THE CROP, MARKETS AND OTHER ITEMS OF NOTE

Some Soybean Planting

In spite of a tremendous volume of field work accomplished in the soybelt in late April, farmers were still behind normal in preparations for corn and soybean planting as of May 1—some places as much as 1 to 2 weeks. Some planting of soybeans had been done in Arkansas, Tennessee, southern Indiana and western Kentucky, and on the East Coastal Plains of North Carolina. Some Arkansas counties had considerable acreage in, with north Mississippi County reporting planting 20% complete, and Greene County with 15% of the acreage planted. A few fields were up to a stand in Mississippi and Poinsett Counties, Ark.

Dallas Western, Quaker Oats Co., Chicago, notes that fields in main Cornbelt states are not working up into the very excellent seedbeds of the past 2 seasons, due to farmers plowing fields while on the west side, which made for a wet cloudy condition. **"It will take timely showers to make for good, even germination of corn and soybeans this spring,"** he says.

Reports are widespread that there has been a deep cut in oat and other small grain acreage due to the lateness of the season, and that this will mean acreage shifts to corn, sorghum and soybeans. Crop reporting services report sharp cut in oats and other small grain acreage in Kansas, Maryland, Delaware and Missouri.

But the Des Moines Register says it now appears that the shift in Iowa of intended oats acreage to corn and soybeans will not be large, although in some areas where oats remained to be seeded, shifting will take place.

A Good Demand For Seed

Soybean seed demand is reported stepped up many places this spring as compared to a year ago, with **local shortages of some varieties.**

Germination tests are highly variable, but good in Iowa, Minnesota and Nebraska. Iowa Seed Dealers Association reports that about 5% of the samples of soybean seed received was below 50% germination, with most of the low germinating seed from southern Iowa.

Frank B. Springer, University of Delaware, says germination of the Clark variety tends to be low, but germination of all other varieties is good. He looks for a swing to Hood and Hill varieties.

Soybean germination reports from the University of Illinois reveal that 27% of samples tested are below the safety mark for seeding purposes. "Unfavorable weather conditions during the growing season last summer and the harvest season last fall caused a large percentage of small undeveloped beans to be present in various soybean fields scattered throughout the state," S. J. Standard, state director of agriculture, said. "There is no doubt that this is the cause of low germination percentages on certain samples sent to the seed laboratory." **Standard urged farmers to have their seed tested before planting to insure a good crop.**

High Moisture Beans

Only 16% of soybean receipts inspected during Mar. 1-15 at 19 selected markets had a moisture content of 11% or less compared with 33% during the same period a year earlier, according to USDA"s Agricultural Marketing Service. Six percent of the Mar. 1-15 inspected soybean receipts this year carried over 14% moisture as against only 1% a year ago.

Dick Potter, Morgan, Minn., reports some farmers have been bringing wet beans from their bins to market. He says one bin ranged from 18% to 12% top to bottom.

Little Gain From Acreage Reduction

It is doubtful that soybean producers would gain any permanent advantage pricewise from a reduction in soybean acreage, even though there might be some temporary price increases, says L. H. Simerl, University of Illinois agricultural economist.

Dr. Simerl points out that over a fourth as many soybeans are exported as are processed, and that the exported beans are sold in highly competitive markets abroad. "Beans must compete in these foreign markets with many other sources of protein feeds and with many other edible oils and fats. We probably could gain some temporary price increases by reducing sales. But this would stimulate production of competitive products in other areas to take over the markets we now have. The increased production in other areas would gradually reduce the demand for our soybeans."

World Crop of Soybeans

World production of soybeans in 1959 is estimated at 958 million bushels by USDA's Foreign Agricultural Service. The revised estimate is 4 million bushels higher than earlier estimates.

Estimated production in the United States remains at 538 million bushels, and in Mainland China 350 million bushels. The two countries normally account for 95% of world production and almost all the soybeans and oil that enter world trade.

Increases in production over earlier estimates are reported for Brazil and Indonesia, and some production is reported for Italy, Nigeria, Cambodia, Taiwan and Thailand that was not available earlier.

Reports On Export Business

Export business announced during April by USDA:

Authorization to Poland to finance the purchase of $1,825,000 worth of cottonseed oil or soybean oil (about 7,000 metric tons) under P.L. 480. Sales contracts made between Apr. 13 and June 30 will be eligible for financing.

Issuance to Egypt of authorizations to finance the purchase of $2.4 million worth (approximately 12,000 metric tons) of cottonseed or soybean oil from U.S. suppliers under P.L. 480. Contracts made between Apr. 26 and July 30 will be eligible for financing.

Supplemental agreement with Pakistan for financing purchase of $12 million worth (about 99 million pounds) of cottonseed or soybean oil under P.L. 480. Purchase authorizations will be announced later.

Agreement with Iceland for financing purchase of $100,000 worth (about 830,000 pounds) of cottonseed or soybean oil under P.L. 480.

Bureau of the Census reports that the United States exported 2,224 metric tons of soybean oil to Hong Kong during the winter. Normally, such oil has been moving to Hong Kong from Japan.

An ICA authorization was issued to Taiwan for $950,000 worth of soybeans (about 10,000 metric tons), contract period Apr. 21 to July 31, and terminal delivery date Sept. 30.

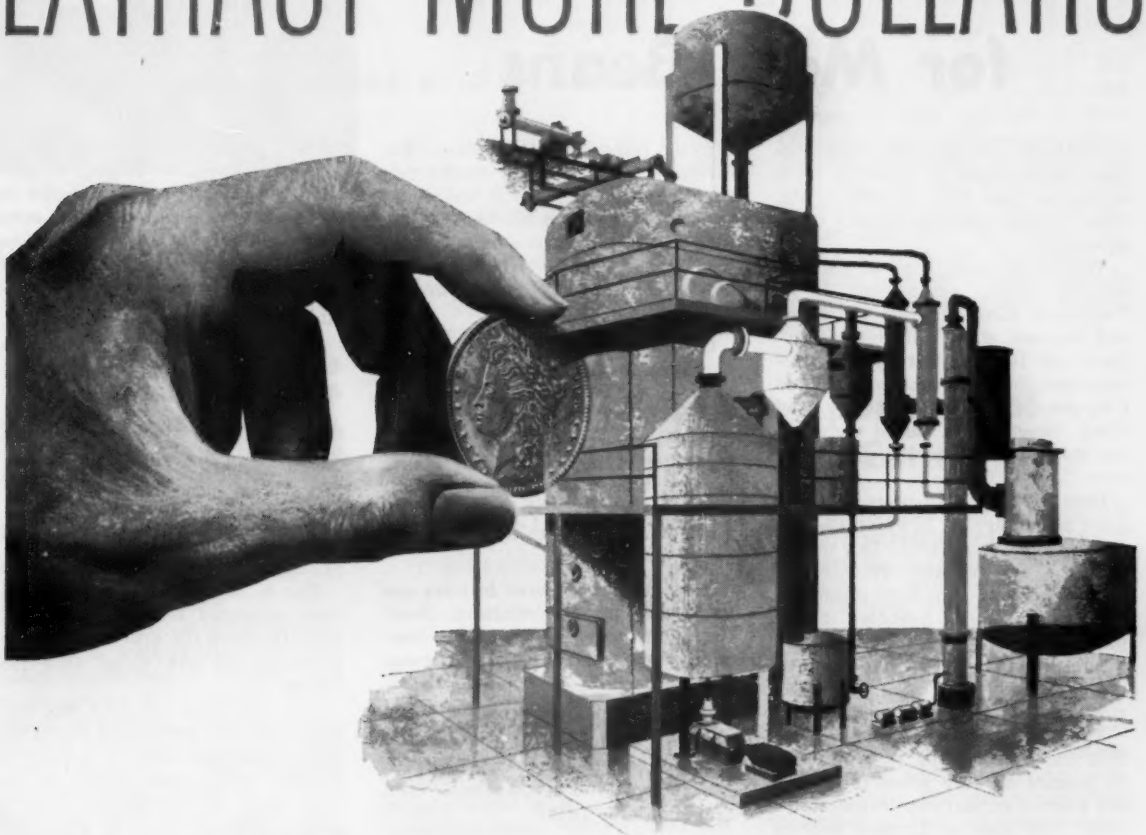
A grant for research aimed at finding new or improved uses of soybean and linseed oils has been made to the University of Helsinki by USDA. The Finland grant will finance a 5-year study. Total value of the grant is $70,640.

The Public Grain Elevator of the Port of New Orleans has listed restrictions on the quantity of soybean meal in bulk it will accept. It will accept not only parcel lots but full cargoes of the commodity in bulk until further notice.

Soybean Council Activities

Plans are well under way for a Soybean Council of America exhibit at the British Food Fair at London, England, Sept. 1-17, and at the International Exhibition of Groceries and Fine Foods at Munich, Germany, Sept. 23 to Oct. 2. James Hayward, director of nutrition research for Archer-Daniels-Midland Co., Minneapolis, will be in attendance at both fairs. Sonja Soya will demonstrate the various uses of soya products, with a cooking demonstration that will be the center of the exhibits.

EXTRACT MORE DOLLARS



use Phillips High Purity* Normal Hexane

"Increase your margin of profit!" You can do it without any "sleight-of-hand" tricks by using Phillips High Purity Normal Hexane. This premium solvent is especially made for oilseed processing . . . and provides all these outstanding benefits to help you extract more dollars from your operation:

* * *

- **Light and Heavy components have been reduced.**
  - —Easier removal from oil and meal
  - —Better solvent recovery
- **Specific Gravity has been lowered.**
  - —Less heat required to vaporize
  - —Less coolant to condense
- **Sulfur and Benzene content have been reduced.**
  - —No residual odor
  - —Improved operations

Costs no more than ordinary hexanes, yet saves you processing money. For immediate delivery from one of many convenient shipping points, for complete information and samples . . . write or call today.

***85% Minimum Normal Hexane Content**

PHILLIPS PETROLEUM COMPANY

Special Products Division

Bartlesville, Oklahoma **Phone: FEderal 6-6600**

More Rows for More Beans

FARMERS CAN increase their soybean yields more by growing them in narrow rows from 22 to 28 inches, than by changing almost any other practice.

This is the conclusion of University of Illinois agronomists J. W. Pendleton, Henry Hadley and Richard Bernard after 1958 tests at Urbana and 1959 tests at DeKalb, Urbana and Brownstown. They planted Chippewa, Harosoy, Shelby and Clark varieties and varied the seeding rates from 60 to 105 pounds an acre.

Results from 352 plots show a yield advantage of 15% for 24-inch rows over 40-inch rows. This means that the farmer who averages 25 bushels with 40-inch rows could add almost 4 more bushels if he planted 24-inch rows. With a 40-bushel yield, he could add about 6 more bushels with the narrower rows.

The Illinois tests results suggest that the best seeding rate is about 75 pounds an acre when the beans are planted in narrower rows. However, 1959 tests at Urbana showed little difference in yield at seeding rates of 60, 75, 90 and 105 pounds. But the 24-inch rows consistently gave the highest yields.

In the research tests, all beans are carefully cut at ground level. The agronomists feel that if they had been cut at the usual combine height, the yield of narrow-row beans would have been even more favorable, since the pods form lower in the 40-inch rows.

Growing soybeans successfully in narrower rows will require some changes in machinery. But some farmers are making the changes to take advantage of the higher yields, the agronomists report. For planting they use either a grain drill with certain holes stopped up, a regular bean or beet planter or an altered corn planter.

For cultivating, these farmers are using regular cultivators or have fixed their own. In most cases they do not try to adjust one cultivator for use on both corn and soybeans.

Harvesting narrow-row beans presents no problems. Narrower rows simply mean that a combine can take in more rows with each trip across the field.

The surest way to get more soybeans per acre is simply to grow more rows per acre, the Illinois researchers say.

BOB HILL, Pawnee, Ill., extended the wheels of his tractor to 88 inches to cultivate six rows of narrow-row soybeans at once. He used a special bean bar. Its movable sweeps fit his row widths.

Estimate Japan Imports 40 Million Bu. in 1960

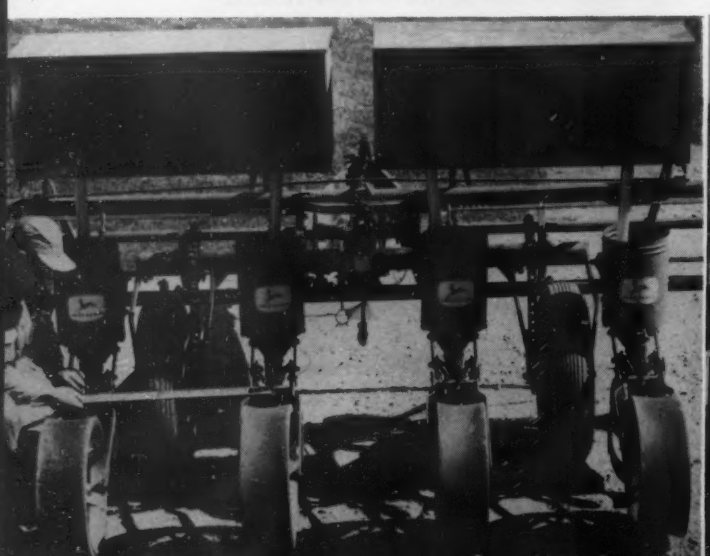
JAPAN'S SOYBEAN import requirements for the 1960 fiscal year which began Apr. 1 have been estimated at 1,205,000 short tons—40.1 million bushels—by the Ministry of Agriculture and Forestry, USDA's Foreign Agricultural Service reports.

This is slightly less than the volume estimated earlier and is only slightly above the estimated total of purchases in the fiscal 1959 just ended.

The plan does not take into consideration the announced liberalization of soybean imports during the present fiscal year, which if put into effect will probably result in larger soybean imports than now planned.

The United States supplied 97% of Japan's soybean imports in calendar year 1959.

PAUL KLEIN, Seymour, Ill., planted his soybeans in 28-inch rows with this corn planter with adjustable row width. He had extra bin space welded on above, so he could carry 11 bushels of extra seed that fed down into the regular planter boxes.



HARVESTING narrow-row soybeans presents no serious problems. J. W. Pendleton, University of Illinois agronomist (foreground), has conducted the research on soybean row widths the past 2 years. This harvest was on the University agronomy farm at Urbana.

SOYBEAN NUTRITION

The following are from papers presented at the "Soybean Nutrition" symposium at the last American Society of Agronomy meeting

Soybean Varieties and Nutrition

By HERBERT W. JOHNSON, JACKSON L. CARTTER and EDGAR E. HARTWIG*

THE SOYBEAN frequently does not respond to fertilizers as do many other crops. Since corn and soybeans are grown in the same areas and under similar conditions, responses to fertilizer as well as other aspects of the two crops are often compared. In general, the soybean responds well to additions of phosphorus and potassium on soils low in these elements and to lime on acid soils. But the response of soybeans to added increments of phosphorus and potassium frequently is of smaller magnitude than that for corn, providing nitrogen is not limiting.

Well-nodulated soybeans yield essentially as well as those receiving heavy applications of nitrogen; and, in the absence of nodulation, the response of soybeans to added increments of nitrogen ceases at comparatively low levels. Thus, it seems highly probable that one of the most important differences between soybeans and corn in their response to fertilizers is in their response to nitrogen.

Soybean research workers have for many years been interested in obtaining greater yield responses from fertilizers. Why do soybeans respond as they do and how can the response be modified to the advantage of man? Perhaps the fact that soybeans have been grown on infertile soils in eastern Asia for centuries has contributed to the development of strains especially adapted to low-fertility conditions. Soybeans introduced from eastern Asia have given rise to the U. S. industry, and may have been highly selected for adaptation to conditions quite different from those in the United States.

Research in the United States has demonstrated, however, that differences among varieties in degree of response to increasingly favorable environments do exist. This can be illustrated by comparisons between Arksoy, a variety introduced from Asia, and Ogden, a variety developed in this country. As a mean of five comparisons where Arksoy yielded 20.5 bushels per acre, Ogden yielded 25.6 bushels, an increase of 25%. However, in five other comparisons with more favorable environments, Arksoy yielded 30.8 bushels and Ogden yielded 48.9 bushels, a yield increase of 59%. Other varietal differences have been observed in response to phosphorus, iron, zinc, and strains of nodulating bacteria. The fact that these response differences do exist is encouraging from the standpoint of breeding soybean varieties capable of producing higher yields at high levels of fertility.

* Research agronomists, crops research division, Agricultural Research Service, U. S. Department of Agriculture.

Physiological Comparisons of Soybeans and Corn

By ROBERT W. HOWELL*

A COMPARISON of the performance of two crop species such as soybeans and corn should consider the energy value of the seed, the "work" the plant must do in producing the seed, and differences in environmental requirements of the crops.

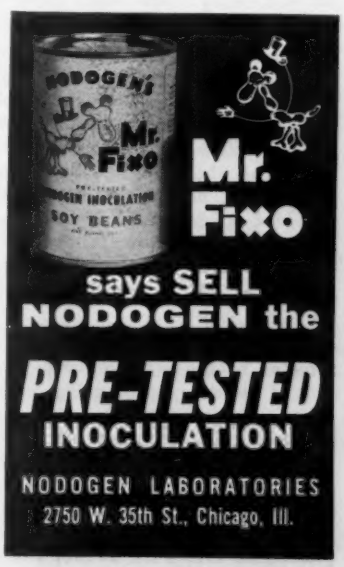
Corn seed is composed mostly of starch, a relatively low energy carbohydrate which is formed from simple sugar with a minimum of metabolic work. Soybean seed contains about 20% oil and 40% protein. A bushel of soybeans contains about 10% more dry weight than a bushel of corn. As a result, the energy stored in a bushel of corn is estimated as about 95,000 calories, while that in a bushel of soybeans is about 136,000. A greater amount of energy is lost as soybeans manufacture oil and protein than when corn makes starch. The energy lost in making oil and protein may be as much as 15-20% of the starting energy.

A big user of energy in soybeans is the nodule system where atmospheric nitrogen is fixed. It is estimated that the nodules consume enough sugar to be equivalent to 10 or more bushels of soybeans per acre. Possibly more efficient bacteria would fix nitrogen equally well on a smaller amount of sugar, thus conserving sugar for use in making oil and protein in the seed.

It is therefore clear that there are differences both in energy content of the seed and in the metabolic "work" required of corn and soybeans. In view of these differences, it is estimated that a yield of 57 bushels per acre of soybeans is equivalent, in terms of biological activity, to a yield of 100 bushels of corn.

Cultural and fertilization practices used on soybeans are usually modifications of practices that are suitable for corn. The requirements and responses of the two crops are not necessarily the same. For example, soybeans acquire nearly half their potash during the period of pod-filling. By contrast, the total potash

* Plant physiologist, crops research division, Agricultural Research Service, U. S. Department of Agriculture.



in the corn plant actually decreases during grain development. A high calcium concentration in the soil solution may reduce potassium uptake by soybeans but may promote it in corn. Liming thus may have opposite effects on the potassium nutrition of the two crops.

Other differences in amount and timing of nutrient requirements for corn and soybeans may exist. There is also evidence of genetic differences in nutrient response of soybean lines to iron and phosphorus. Thus it is clear that soybean nutrition is incompletely understood at present and that much additional research is needed to fully explain the so-called peculiarities of soybean fertility response.

Trace Elements in Soybean Production and Factors Affecting Their Availability

By P. H. REID, E. J. KAMPRATH and H. J. EVANS

THE MINERAL nutrition of the soybean plant is complex. At least 12 different soil nutrient elements are required for growth, and any alteration in the supply of any one may change the requirement for one or more of the others. Of the 12, boron, iron, manganese, copper, zinc, and molybdenum are required in very small quantities. These are called trace elements.

In spite of the very small quantity of the trace elements required for growth, deficiencies frequently occur. The deficiency may be induced by any of several factors. In the Southeast, manganese deficiency frequently occurs on soils that have been limed to near neutrality. Consequently, previous efforts to correct the deficiency have been directed towards controlling the lime level.

Recent studies have shown that soybeans respond readily to lime applications sufficient to raise the pH to neutral. If manganese becomes limiting, it can be supplied as fertilizer. This shows that soybeans can obtain manganese at high lime levels provided it is supplied in sufficient quantities. Therefore, the problem in the Southeast is obviously a deficiency of manganese rather than an excess of lime.

Trace element availability is also affected by the organic matter content of the soil, the microbial population, the concentration of other elements, soil type, moisture supply, soil temperature and probably many other factors. Certain elements which are always present in the soil, but which are not required by the plant, also affect the availability of the trace elements. Aluminum is an example of such an element.

Plants have different capacities to take trace elements from the soil. Studies at North Carolina showed that soybeans took up less than one-half as much manganese as cotton. Soybeans on the other hand, took up considerably more iron, copper and boron than did cotton. Ogden soybeans took up only 114 parts per million of manganese from a field while Lee soybeans growing in an adjacent row took up 197 parts per million.

Molybdenum unlike manganese, boron, iron, copper and zinc, becomes increasingly available as the soil pH is raised. The molybdenum requirements of the soybean plant have been studied fairly extensively. Growth responses to molybdenum have been obtained on acid soils but not on soils which are adequately limed. However, soybeans which have been supplied with molybdenum have fixed more nitrogen than have those which received no supplemental molybdenum. This shows that molybdenum is involved in the nitrogen fixation process.

Since toxicities as well as deficiencies of the trace elements are known to occur it is important that the elements be applied as fertilizer only where a known deficiency exists. Present soil assays for the trace elements are not wholly satisfactory. For this reason, a combination of soil tests, plant tissue tests and fertilizer and liming history is now required to make diagnosis.

Although the physiological function of most trace elements has been established, the soil-plant relationships are not as clear. This is an area which needs a concentrated research program.

Iron Chlorosis as An Indicator of Interacting Factors In Nutrition

By J. C. BROWN, L. O. TIFFIN, and R. S. HOLMES*

SOIL FERTILITY is a variable factor that has stimulated the establishment of soil testing programs as a basis for making fertilizer recommendations for plant growth. Less emphasis has been placed on the plant species as a variable factor in plant nutrition. Yet, growing on the same soil, one plant species may develop a mineral deficiency that does not develop in another plant species. Plant species are known to differ in their susceptibility to magnesium, manganese, copper and iron deficiencies.

Iron nutrition studies have demonstrated that interacting factors control the absorption and utilization of iron in plants and that all plant species do not respond in the same manner. The availability of any supply of iron to plants in a growth medium is dependent on both the plant species and the growth medium.

Quinlan soil from Oklahoma, Tripp soil from Kansas, and Millville soil from Utah are known to be soils that will produce iron chlorosis (iron deficiency) in some plant species. PI-54619-5-1 soybean (PI), Wheatland milo, and Hawkeye soybean (HA) were grown on these three soils. PI-soybeans developed chlorosis on all three soils; Wheatland milo developed chlorosis on only Quinlan and Tripp soils; and HA-soybeans remained green on all three soils. This indicates a difference in causative factors producing iron chlorosis between soils and a difference in plant response to these causative factors.

Samples of the above three soils were treated with 97 ppm ethylenediamine di (o-hydroxyphenylacetic acid), designated EDDHA chelating agent, shaken with water for 24 hours and filtered. The filtrate showed a difference in the extractable iron content of the three soils. Iron in the soil combines with the EDDHA chelating agent to form

* Soil scientist, plant physiologist, and chemist, respectively, mineral nutrition laboratory, soil and water conservation research division, Agricultural Research Service, U. S. Department of Agriculture.

FeEDDHA which gives a red color and is soluble in water. Quinlan soil extract had practically no red color, Tripp extract was moderately red, and Millville extract was a deep red color. The Fe/Cu + Mn ratio in the extract from Quinlan, Tripp, and Millville soils was 0.68, 1.41, and 2.00, respectively. Millville soil contained the most available iron as measured by the capacity of EDDHA chelating agent to form FeEDDHA in the soil. But available iron supply does not explain why HA-soybeans are green and PI-soybeans are chlorotic on all three soils.

In addition to iron, the amounts of available phosphorus and calcium differ between Quinlan, Tripp, and Millville soils. Quinlan soil contains 16 pounds, Tripp 23 pounds and Millville 189 pounds of sodium bicarbonate extractable P_2O_5 per acre and 2.0%, 0.5%, and 9.0% free calcium carbonate, respectively. It has been established that Wheatland milo and Hawkeye soybeans have the capacity to tolerate higher levels of phosphorus than PI-soybeans without developing iron chlorosis. Phosphorus will internally inactivate iron in PI-soybeans. The available phosphorus and calcium supply in Millville soil appear to be factors contributing to iron chlorosis in PI-soybeans.

Plant response to the factors in the soil which produce chlorosis differs between plant species and varieties and appears equally as important as the causative factors of chlorosis in the soil. An understanding of interacting factors functioning in plant nutrition should enable the adoption of cultural practices which lessen rather than augment an unfavorable condition. With reference to iron chlorosis, excessive phosphate fertilization should be avoided, especially on calcareous soils. Phosphorus effects on iron metabolism, which differ with plant species, remain a challenge for further research.

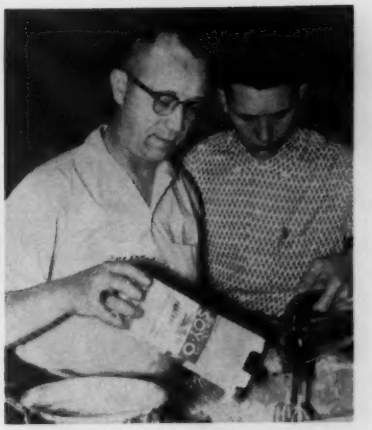
Sees Declining Ruminant Market

WITHIN 5 years, no cottonseed, linseed, or soybean meal will be fed to ruminants, Roswell Garst, hybrid seed corn producer and cattle feeder, Coon Rapids, Iowa, told the Grain & Feed Dealers National Association at Kansas City recently.

Urea will be fed instead of protein meals because it is cheaper, Garst said. He predicted that fewer soybeans will be raised in the future—"7¢ oil doesn't raise beans"—and that smaller supplies of soybean meal will be available.

—Soybean Digest Photos

EXTENSION Agronomist William Hueg (left) and ASA's vice president Charles V. Simpson at Dawson, Minn., soybean meeting.



ANOTHER batch of "Soy-O" pancakes is stirred up by Clarence "Skip" Skotterud (left) and Virgil Olson, both of Dawson, at the Dawson soybean day.

Pancake Day Winds up Minn. Meetings

A SERIES of Minnesota soybean meetings wound up at Dawson Apr. 1 with a free "Soy-O" pancake and sausage luncheon. Approximately 450 people attended the meeting and luncheon.

The series of meetings, in charge of the American Soybean Association's two Minnesota directors, Vice President Charles V. Simpson, Waterville, and John W. Evans, Montevideo, were held to acquaint Minnesota farmers with the importance of soybeans in the state. Meetings were held at Waseca, Glenville, Olivia, Owatonna, Moorhead, Windom, and Dawson.

Sponsors in addition to the American Soybean Association were the county crop improvement associations, the Minnesota Extension Service and local business organizations.

The story of the worldwide activities of ASA and the Soybean Council of America in promoting export markets for soybeans was told to Minnesota farmers.

And the problem of legal restrictions on soybean products such as margarine that continue in Minnesota even though a large part of the state's farmers have a larger stake in soybeans than they do in butter was also discussed.

Soybean varieties and diseases, fertilization and other problems of production were reported on by Minnesota extension men.

THE COVER PICTURE

IN CHARGE of pancakes at the Dawson meeting was Joe Givens, manager of the Tri-County Cooperative Soybean Association, at Dawson, one of the sponsors of the Dawson meeting.

Howard Peterson, Dawson vocational agriculture instructor, helped make arrangements for the meeting and was in charge of publicity.

Nematode-Fungus Team Is Destructive

IF ROOT KNOT nematodes and root rot fungi both get into the same field, a soybean crop can be virtually wiped out before the young plants even break through the ground.

University of Minnesota scientists planted soybeans in soil infested with both nematodes and the fungus. Germination 3 weeks later was only 2%.

Taylor and Wyllie found that 3 weeks after planting, soybeans in the soil infested with the northern root knot nematode alone averaged 83% germination. Where the fungus was present without nematodes, germination was cut in half.

If you added these two reductions together, the result would be about 33% germination. Yet, where both nematodes and fungus were present, only 2% of the soybean plants were actually alive 3 weeks after planting.

FRENCH OIL MILL Machinery personnel with officers of Southern Soya Corp., Inc., outside the main office of Harper & Bowers. Left to right: R. A. Denman, general manager of Southern Soya; Grover Bowers, Southern Soya vice president; Tom R. Brooke, French southern states representative; R. P. Hutchins, French technical director; C. B. Upton, French vice president and general manager and inventor of the stationary basket extractor; Stiles Harper, Southern Soya president; George Neumunz, French representative for foreign sales; F. C. Simon, French chief engineer; H. R. Youmans, Southern Soya superintendent; and Clarence Brown, French field engineer.

New French Extractor at Estill, S. C.

FRENCH OIL MILL Machinery Co. announces the successful installation of a new design of solvent extraction plant now in operation at Southern Soya Corp., Estill, S. C. This new extractor is called the French Stationary Basket Extractor and has the unique characteristic of keeping the flakes completely at rest throughout the entire extraction cycle.

This feature is made possible by a number of ingenious devices for the basket filling, miscella application, miscella collection, and spent flake collection. It eliminates the need for a separate spent flake conveyor drive, with a consequent saving in power. It also permits the establishment of a filter bed which filters the full miscella completely and eliminates the need of an external filter.

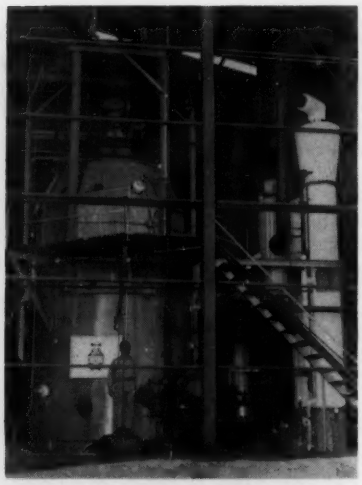
Southern Soya Corp. has been formed by the management of Harper & Bowers, who operate a number of grain elevators throughout South Carolina, which will supply a large part of the required beans for processing. Stiles Harper, the senior partner of Harper & Bowers, is also president of Southern Soya Corp. Grover Bowers, the junior partner, is vice president. R. A. Denman, general manager of Southern Soya Corp., handles all oil and meal sales. Plant operations are under the direction of H. R. Youmans, superintendent.

The plant was put on steam around Feb. 1 and has had a very satisfactory startup. "We have obtained premiums on our oil shipments from the very start of our operations," says Mr. Denman. "We are shipping carloads of meal with an oil content as low as 0.3%, and have some shift results under 0.2%."

The basic idea of this extractor and the essential details that make it work came from C. B. Upton, vice president and general manager of the French Oil Mill Machinery Co. Mr. Upton has been working actively in the oil milling industry for over 50 years and holds a number of patents in this field.

Many engineers of the French engineering and production organization contributed to the completed installation, but special mention should be made of Clarence Brown, field engineer, and Gene C. Mason, project engineer, who actively supervised the installation and startup of the plant.

"Although we had a normal amount of startup problems, we are very pleased with the overall operation of our plant," says Mr. Harper. "The new extractor seems to be a very efficient extraction machine."



COMPLETED installation of French Stationary Basket Extractor with accessory equipment. Gene Mason, installation engineer, in foreground.

International Crushers Will Meet in London

THE 1960 CONGRESS of the International Association of Seed Crushers will be held at Grosvener House, Park Lane, London, England, July 19-22, A. E. Peel, the secretary, has announced.

A reception by the Incorporated Oilseed Association at Guildhall and a golf competition for delegates and their ladies sponsored by the UK National Seed Crushers' Association will precede the event. Also excursions to various points are being arranged.

For information concerning the conference contact International Association of Seed Crushers, 1, Watergate, London, E. C. 4.

The International Association met at Cannes, France, in 1959.

$4 Million Elevator At Pascagoula, Miss.

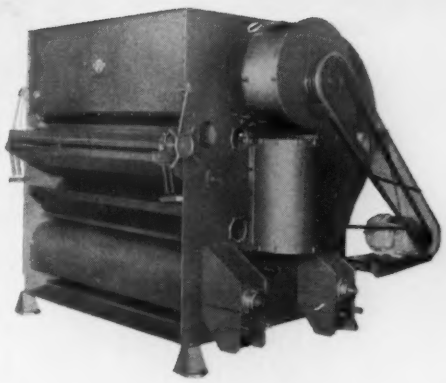
JACKSON COUNTY, Miss., authorities have signified their intention of accepting a $3,762,659 bid for construction of an elevator at the Port of Pascagoula, according to the Pascagoula Chronicle Star. Blount Bros. Construction Co., Montgomery, Ala., was low bidder.

The elevator, to be located near the Port terminal, will have a capacity of over 2 million bushels, and will offer an outlet for the Mississippi soybean crop. It is to be completed within 14 months.

Pascagoula is located at the mouth of the Pascagoula River on the Gulf, is 40 miles from Mobile, Ala., and 100 miles from New Orleans.

How to meet the latest De-hulling requirements

CARTER MILLERATOR



CARTER DUO-ASPIRATOR

The Carter Millerator and Carter Duo-Aspirator provide a combination of screening and aspiration units which satisfactorily remove hulls from cracked soybeans—with minimum loss of oil stock.

The Millerator—preceded by the Carter Scalperator—also is used successfully as a cleaning machine at the head of the bean cleaning stream.

A SPECIAL FOLDER deals with de-hulling operations and cleaning operations. Write today.

SIMON-CARTER CO.

689 19th Ave. N. E., Minneapolis 18, Minn.
Sterling 9-2417

Simon-Carter Co.
689 19th Ave. N.E., Minneapolis 18, Minn.
Please send Soybean Folder SB-1.

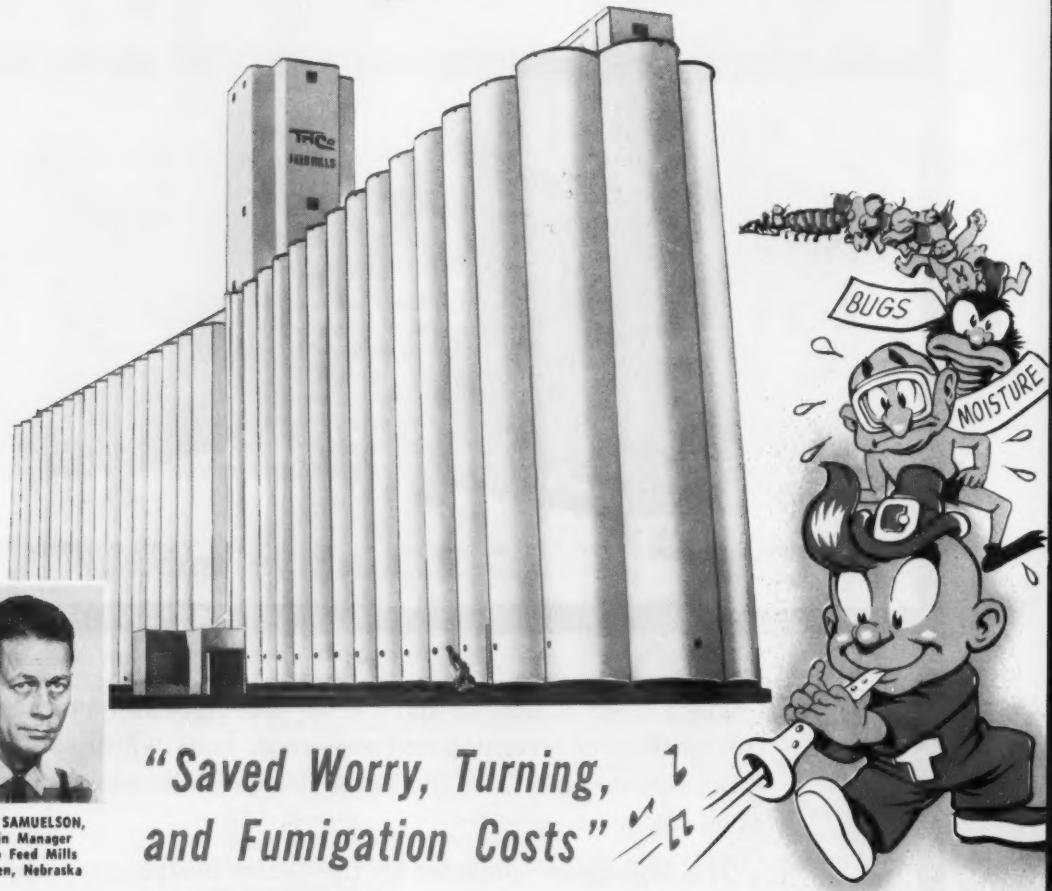
NAME_____

FIRM_____

ADDRESS_____

CITY_____ STATE_____

Pied Pipers..... of G



E. C. SAMUELSON,
Grain Manager
Trico Feed Mills
Minden, Nebraska

"Saved Worry, Turning, and Fumigation Costs"

"We equipped our new 1,000,000 bushel annex with a complete Hot Spot Engineered Aeration System. We also have Hot Spot equipment in our other facilities. Both the temperature and aeration systems have saved us a great deal of worry as well as expense in needless turning and unnecessary fumigation. We are convinced our Hot Spot equipment was a wise investment and rely on it to help guide our storage operations."

●ELECTRONICS SUBSIDIARY OF NEPTUNE METER CO.

hot spot detector, inc.

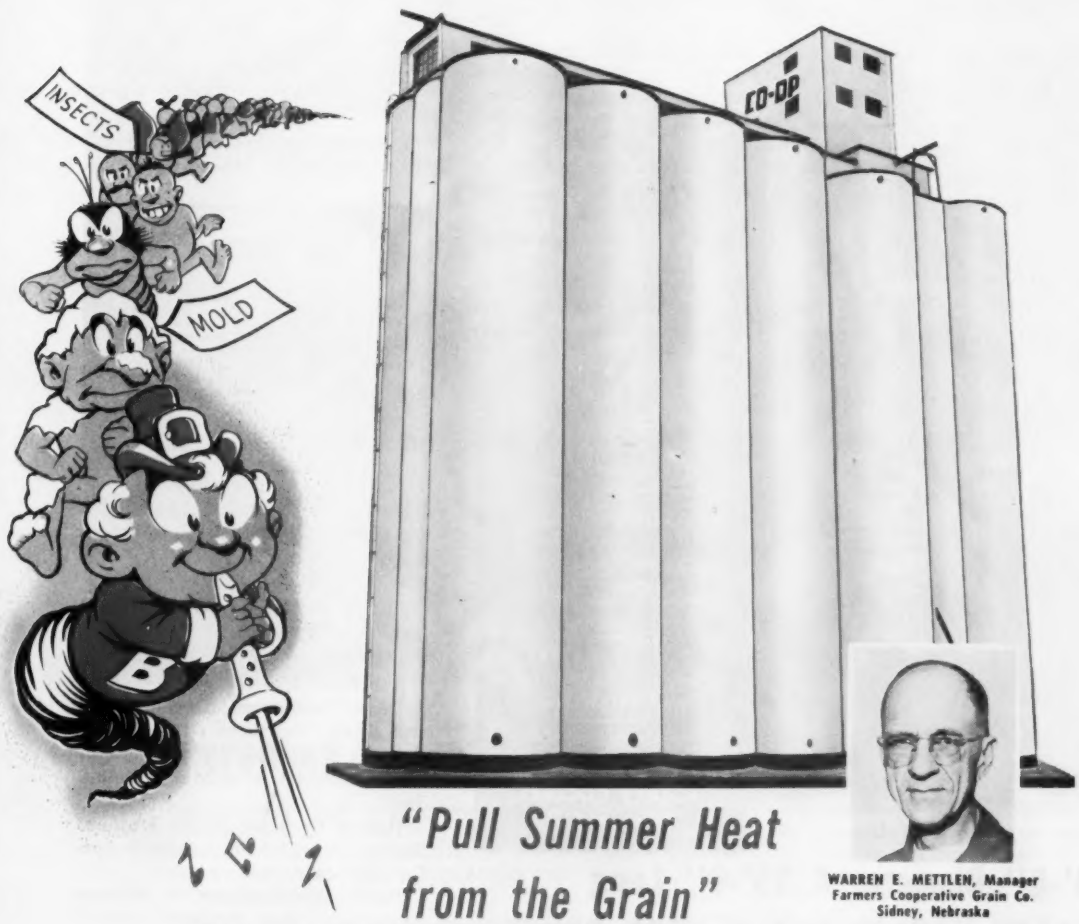
CIRCLE OF PROTECTION

214 THIRD STREET DES MOINES 9, IOWA · ATlantic 8-9541

Write today for the complete Hot Spot Detector Profit Making Story!

rainland!

If you can reduce the risk involved with your storage operation, and at the same time reduce your operating costs, you will have a better profit picture. Hot Spot Detector Temperature and Engineered Aeration Systems can do just that for you. Hot Spot Temperature systems let you know the moment possible grain damage starts; Hot Spot Engineered Aeration is ready to help stop the damage almost before it occurs. The modern grain man relies on Hot Spot equipment for a sound, businesslike operation. Here are reports from two such leading grain men:



"Pull Summer Heat from the Grain"

WARREN E. METTLEN, Manager
Farmers Cooperative Grain Co.
Sidney, Nebraska

"We have both Hot Spot Temperature and Engineered Aeration Systems in our concrete houses and are completely sold on this equipment. The temperature system tells us when trouble is developing. The aeration system lets us do something about it with very little expense. We are able to pull the summer heat from our grain thus lowering the temperature to a predetermined safe storage level easily and automatically by using the two systems in combination. Lowering the temperature is of vital importance to us because bugs will not breed or become active when the temperature is low. We heartily recommend Hot Spot."

L. M. McBRIDE tells about the tremendous growth of the soybean crop at Fulton, Ky., meeting.

Soybean Program at Fulton, Ky., Rotary

SOYBEANS were the subject of the program at the annual Rural-Urban day of the Fulton, Ky., Rotary Club recently. L. M. McBride of the Browder Milling Co. and David Phelps of Pure Milk Co. in Fulton were in charge. Each member of the club had one or more farmers as guests.

Mr. McBride gave a brief talk telling of the tremendous growth of soybean production in the past few years, including growth in the surrounding counties of Fulton, Obion, Hickman, Graves and Weakley; and the growth in the export market.

He mentioned the fact that the Japanese alone import nearly 40 million bushels of U. S. soybeans annually.

Mr. McBride called attention to the fine work being done by the American Soybean Association and the Soybean Council of America in conjunction with the Foreign Agricultural Service of the U. S. Department of Agriculture in sending men throughout the world to promote the sale and use of our soybeans.

The film, "Soybeans—the Feature Story," obtained from ASA was shown and copies of the pamphlet, "The Soybean—Miracle Crop of the 20th Century," were passed out along with cards telling how to become an American Soybean Association member.

Tri-States Oil Mill Group Meets at Biloxi June 5-7

"SEEKING KNOWLEDGE" will be the theme of the 35th annual convention of the Tri-States Oil Mill Superintendents Association in Biloxi, Miss., Buena Vista Hotel, June 5-6-7. Registration begins at 3 p. m. June 5.

Woodson Campbell, Mississippi Oil Mills, Hollandale, Miss., is program chairman, and N. L. Pugh, Jr., Southern Cotton Oil Division, Wesson Oil & Snowdrift, Newport, Ark., is general convention chairman.

Frank L. McDonald **Roy Castillow**

Frank L. McDonald, Planters Manufacturing Co., Clarksdale, Miss., is president of the association.

Addresses will include:

"New Cottonseed Developments and Their Significance to Processors," R. A. Phelps, National Cottonseed Products Association, Dallas, Tex.

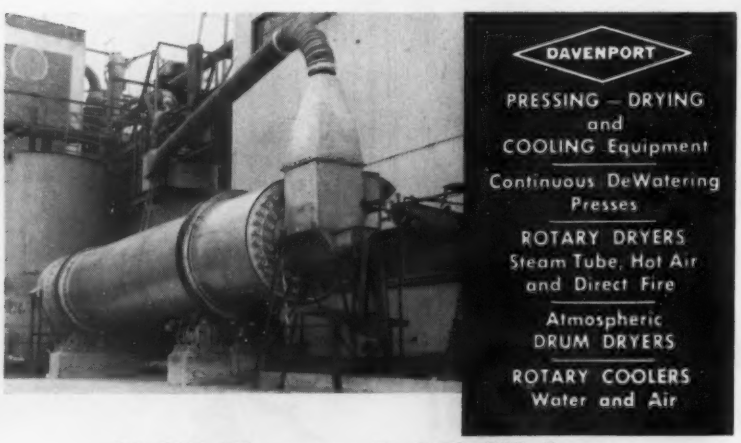
"Use of Soybeans in the Southern States," H. L. Wilcke, Ralston Purina Co., St. Louis, Mo.

"New Developments in Solvent Extraction," Dean Bredeson, French Oil Mill Machinery Co., Memphis, Tenn.

"Protein Control of Meal Shipments," W. G. Quinn, Buckeye Cellulose Corp., Cincinnati, Ohio.

"Operating and Maintaining Screw Presses," Roy Castillow, Southern Cotton Oil Division, Wesson Oil & Snowdrift, Little Rock, Ark.

Please mention the Soybean Digest to our advertisers.



6'-0" Diameter X 35'-0" Long
DAVENPORT ROTARY STEAM TUBE DRYER

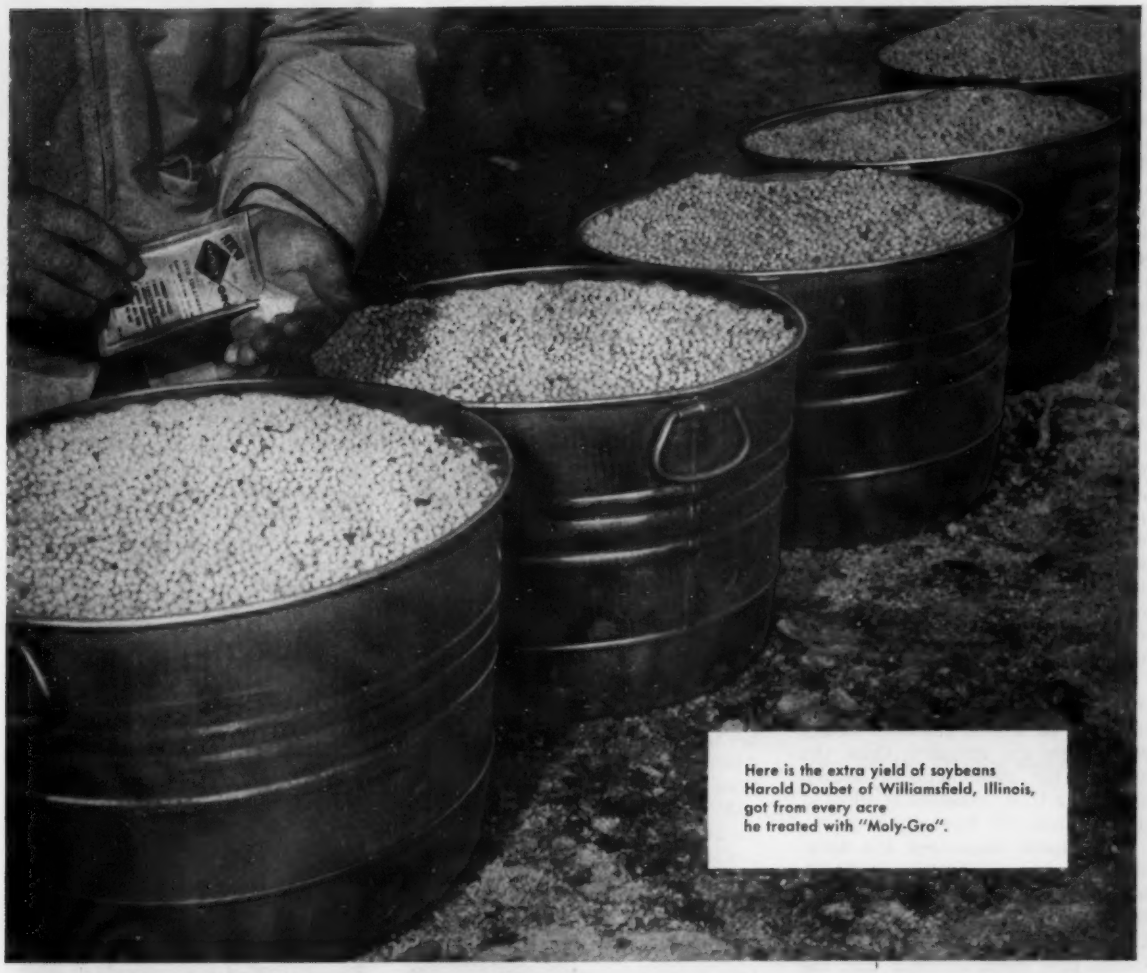
Another recent "DAVENPORT" Dryer installation drying solvent extracted soy bean meal.

Let our engineers consult with you on your Pressing, Drying and Cooling problems or send for our catalog D. For quick reference consult your Chemical Engineering Catalog.

DAVENPORT MACHINE AND Foundry Company

DAVENPORT **IOWA, U. S. A.**

MOLY-GRO, New Soybean Seed Treatment can return up to $10 for every $1 you invest



Here is the extra yield of soybeans Harold Doubet of Williamsfield, Illinois, got from every acre he treated with "Moly-Gro".

Increased Soybean Yields of 10% and more reported

Last Spring, farmers in your area treated their soybean seeds with "Moly-Gro". Many found yields increased by an average of 10%. At today's prices, that means a return of more than $10 for every dollar invested in "Moly-Gro".

HOW "MOLY-GRO" WORKS

Molybdenum is generally not entirely available to soybean plants in acid soils. "Moly-Gro" contains molybdenum which plays a vital role in stimulating root nodule bacteria to fix atmospheric nitrogen and further to convert the nitrates to profitable protein. "Moly-Gro" treated soybeans germinate well . . . are more vigorous . . . and produce higher yields.

"Moly-Gro" is easy to use. Apply it in minutes, or have your seed treater do it for you. It is compatible with inoculant bacteria and can be applied at the same time.

Get "Moly-Gro" now—it costs only $6.90 to treat 20 acres—less than 35¢ an acre. See your dealer.

MOLY-GRO®

CLIMAX MOLYBDENUM COMPANY

A division of American Metal Climax, Inc.

1270 Avenue of the Americas, New York 20, N. Y.

JAPANESE-AMERICAN SOYBEAN INSTITUTE

A Visit to Leading Tofu Factory

By SHIZUKA HAYASHI
Managing Director, Japanese American Soybean Institute, Nikkatsu International Bldg., No. 1-Chome Jurakucho Chiyoda-Ku, Tokyo, Japan

U. S. SOYBEANS are becoming quite popular with the manufacturers of frozen tofu. Until a couple of years ago frozen tofu manufacturers in Japan were using domestic and Chinese soybeans exclusively. But since the interruption of trade between China and Japan these manufacturers have gradually shifted to U. S. soybeans. Now the larger percentage, or even perhaps 100% of their soybeans, is U. S. soybeans.

Research carried out by individual frozen tofu manufacturers in recent years has taught the technique of successfully using U. S. soybeans to replace domestic or Chinese soybeans. When the writer made his first tour to the Nagano district a few years ago soon after the establishment of the Institute, the situation was most disappointing. No manufacturers of frozen tofu liked to use U. S. soybeans. Only a few makers had used them occasionally.

Thanks to the studies made by the different manufacturers, U. S. soybeans have now gained a strong position in this industry. Once the formula for manufacturing frozen tofu using U. S. soybeans is adopted this position will be easily held.

They have discovered the technique of processing ordinary U. S. soybeans which are imported into Japan as No. 2 grade or Illinois No. 2. So even under present standards frozen tofu manufacturers will use U. S. soybeans continuously.

The situation has become much more favorable to U. S. soybeans since uniform and better quality beans have become available when desired under contract for specific varieties. Several thousand tons of the Harosoy and Hawkeye varieties have been imported and are now being used by frozen tofu manufacturers as well as by the ordinary tofu makers and also by the miso manufacturers.

The Lee and Jackson varieties, which have been recommended as suitable for tofu making as a result of the research carried out by the two Japanese scientists at Peoria, are also being imported on a trial basis. As long as these special varieties come into Japan they will be available to the frozen tofu manufacturers. Thus the position of U. S. soybeans will be more and more strengthened.

Quite recently David R. Farlow, assistant to the American Soybean Association executive vice president, and the writer visited the largest and most modern frozen tofu factory, which has just been completed in the outskirts of Nagano City.

Everything in this factory is operated automatically. After foreign materials are largely eliminated the beans go through the washing machine. Here smaller foreign material particles are taken out. The beans are then soaked in a number of tanks for 20 hours. The wet, soft beans are crushed into a thick milky substance which is steamed before going through a centrifuge where the milk and residue are separated.

In ordinary tofu making this milk is immediately curdled, but in frozen tofu the milk is filtered several times to get rid of fibers. Calcium chloride is added and the milk coagulated. Here again, unlike ordinary tofu, the coagulated substance is stirred before being put in rectangular wooden boxes. The boxes are then placed on a conveyor which slowly carries the tofu to the freezer. Tofu is frozen at a temperature of −18° C. for 3 hours and at −3° C. for 18 hours. The frozen tofu is then put on a conveyor and sprinkled with water for thawing and through a roller which squeezes off the moisture. It is then conveyed into the drier for 11 hours. The finished dried tofu cakes with moisture down to 10% are packed automatically. One hundred and twenty pieces are packed in 1 minute. They are now ready for sale.

This factory alone consumes 12 tons of U. S. soybeans a day, approximately 4,000 tons a year. There are three large tofu manufacturers in Japan beside the one we inspected. The total number of manufacturers including smaller ones is approximately 3,400.

It is very encouraging to realize that the frozen tofu manufacturers have now become good users of U. S. soybeans.

Mr. Tsukada, president of this factory and also now the president of the All Japan Frozen Food Tofu Manufacturers Association, complimented the promotional activities of the Japanese American Soybean Institute. He also expressed his gratitude because the housewives in the rural areas are using more and more frozen tofu due to our promotional work. He added that even doctors in his area are now encouraging more consumption of frozen tofu because of its superior nutrients. As a result of the increased consumption even with his larger manufacturing capacity he can hardly meet demands.

This association being greatly encouraged by the promotional work which JASI is carrying out has at its own expense carried on publicity and education on the radio and television, and cooking demonstrations in important cities. This association may in the near future become a member of JASI.

LARGE MODERN tofu factory at Nagano City. Mr. Tsukada (left), president of the firm, and Mr. Hayashi. All operations are automatic.

Sendai Tofu Factories Now Use U. S. Soybeans

TOFU FACTORIES in Sendai Japan, have recently been using mostly American soybeans, Kokichi Endo, a Sendai tofu producer, recently told the people attending a cooking course and exhibition of soybeans and soybean products at Sendai Station. The Japanese American Soybean Institute was one of the sponsors.

U. S. soybeans are superior in uniformity of quality, according to Mr. Kokichi. Each bag of domestic soybeans, including the crop of Miyagi Prefecture, differs in quality, and they also differ in moisture content.

About 1,500 people attended the course and exhibition during the 3 days it was held.

"why did we buy a *Clipper* - RANDOLPH?

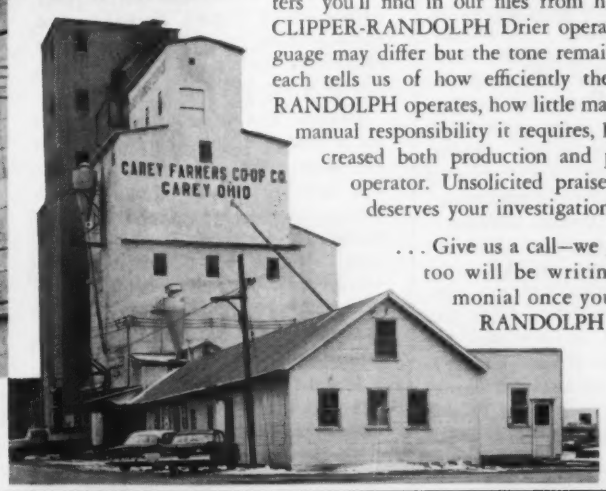
A. J. "Tony" Dibling, (l) Elevator Manager, and Kenneth Dible, (r) Plant Foreman and grain mill operator for the Carey-Farmer Co-op, Carey, Ohio.

. . . Well, we didn't buy without first comparing specs of leading makes. Our visits to nearby plants using this drier confirmed Ferrell's claims of getting high-rated capacity, quality drying, economy and prompt factory service.

Our 750 bushel drier has brought us considerable new business since we first fired it up last September. The fuel consumption is less than we figured and our plant foreman, Ken Dible, runs it along with his other duties, with full confidence and no strain at all.

When our volume exceeds the capacity of both the drier and the Ferrell legs, we'll definitely buy another Clipper-Randolph setup."

A. J. "Tony" Dibling, Elevator Manager
Carey-Farmer Co-op,
Carey, Ohio



. . . This is but one of the many "Ferrell fan letters" you'll find in our files from highly satisfied CLIPPER-RANDOLPH Drier operators. The language may differ but the tone remains the same—each tells us of how efficiently their CLIPPER-RANDOLPH operates, how little maintenance and manual responsibility it requires, how it has increased both production and profit for the operator. Unsolicited praise of this type deserves your investigation.

. . . Give us a call—we guarantee you too will be writing us a testimonial once your CLIPPER-RANDOLPH goes to work for you.

CLIPPER
DRIERS • LEGS
CLEANERS

A. T. FERRELL and COMPANY

1621 Wheeler St., Saginaw, Michigan

$367 Million Exports in 17 Nations

A READY MARKET for $367 million worth of U. S. soybeans and soybean products is ours for the taking. That was the message that Howard L. Roach, president of the Soybean Council of America, Inc., delivered to officials of USDA's Foreign Agricultural Service and others in the Department of Agriculture in early April after his last trip abroad in behalf of soy product markets. The Council president believes that markets can be opened up abroad for products from one-third to one-half of total soybean production.

Mr. Roach presented a carefully documented report, country by country, following a 70-day trip covering 16,000 miles through Europe, the Mid-East, India and Pakistan. He left the United States Jan. 23 and returned Apr. 4.

Accompanying him on his trip were Volorus H. Hougen, chief of the fats and oils division, FAS, and Fred R. Marti, area director for the Soybean Council in Rome.

The international marketing program is being developed under P. L. 480 on a 42-nation contract between FAS and the Council signed last January. P. L. 480 authorizes the sale of surplus U. S. agricultural products in the currencies of recipient countries. Roach points out in his report that over 50% of the estimated sales on oil and all soybean and meal sales will be made for U. S. dollars.

According to FAS officials the Soybean Council contract was completed because of the outstanding marketing record made by the Council since its inception in 1956. Prior to this contract the FAS and the Council cooperated on a country-by-country contract basis with such success that soybeans and soybean products marketing have increased 10-fold in the contracted countries.

Necessary now to put the international sales program into immediate effect is approval by FAS of the 17 individual country contracts submitted by the Council to FAS. Immediate approval is necessary because some of the present country-by-country authorizations expire with the current fiscal year ending June 30. The Council program calls for the extension of these contracts and the projection of the global contract through fiscal year 1961-62.

Included in the extended contract are the Latin American countries. Roach visited most of these countries last fall and is planning on leaving soon to establish an area office in South America and prepare country-by-country contracts for South America and Caribbean countries.

"Full execution of the 42-nation contract," Roach reported, "will open overseas markets for the products from one-third to one-half of our total production."

According to figures in the report submitted by Roach, the 17 countries visited overseas offer a market within the next 18 months for 890,000 metric tons of soybean oil, 275,000 metric tons of soybean meal, and 2,685,000 metric tons of soybeans (98.6 million bushels). Immediate signing of the contracts would implement the sales.

Mr. Roach visited with local representatives of CARE, Church World Service, and National Catholic Welfare Conference in many of the countries and found them doing a most excellent job of distributing U. S. agricultural commodities to the needy of those nations.

Highlights from Roach's country-by-country report:

Egypt. Egypt is short of edible fats and oils, and with rising population and increased standard of living the shortage will increase. Government policy is to discourage the further expansion of cotton growing, and cottonseed oil pressed from domestic cottonseed has been the principal source of Egypt's fats and oils.

Greece. The present high support for wheat is causing the government embarrassment and a shift to animal agriculture is being encouraged. Roach explained to Greek government officials the value of soybean meal in such a program. Greece's olive crop is not adequate to supply domestic needs for edible oil and there will be need for importation of edible oil in the near future.

Israel. The Council has an active program in operation here. This was extended for 2 years by agreement with the government of Israel, the Israeli oilseed crushers pool, and FAS while Mr. Roach was in Israel.

Lebanon. There is a rapidly growing poultry industry with a keen desire by poultry raisers for soybean meal as a source of protein. The American University of Beriut, which trains potential business and government leaders for most of the United Arab Republic, is interested in technical assistance from the Soybean Council.

India. The Council's participation in agricultural and trade fairs in New Delhi, Bombay, Calcutta and Madras has aroused the keen interest of the Indian people in soybeans and soybean products. Many in the oil refining industry indicated a willingness to import small quantities of soybean oil providing the Council would furnish technical assistance and advice on the use of the oil, which was promised.

Pakistan. Edward N. James, who has been giving technical assistance in refining and hydrogenating soybean oil to vanaspati manufacturers, reported great interest on their part, and said they had asked for more help.

Iran. Has one of the most modern oil refining and margarine manufacturing plants and is turning out excellent products. Iranian industry is making tremendous strides and there

SOYBEAN COUNCIL President Howard L. Roach (right) and Max Myers, FAS administrator, before Roach's last trip abroad. He said on his return: "In much of the area visited the merest introduction to soybeans has been made and as knowledge becomes more prevalent the possibilities of increasing sales are tremendous."

SOYBEAN COUNCIL OF AMERICA, INC.

is keen interest in the use of soybean oil in an oil deficient nation.

Turkey. Very deficient in fats and oils. Technical assistance given by the Council to oil refiners, vegetable ghee makers and soapers is paying great dividends in good will. Additional assistance was promised.

Yugoslavia. Yugoslavia is encouraging the breeding of meat-type hogs which cuts down on lard production. Is exporting much cured ham and luncheon meat to England, but needs U. S. soybean meal in order to expand livestock production. There is a shortage of both oil and meal as Yugoslavia has inadequate crushing capacity.

Spain. The Council's project in Spain has created a tremendous amount of good will between U. S. and Spanish industry and agriculture.

Germany. The Council's project has produced considerable good will between German oilseed crushers and U. S. business interests. The Council has decided to enlarge the program and establish an office in Hamburg.

Netherlands. Industry representatives expressed satisfaction with the quality of U. S. soybeans being imported into the Netherlands and said the oil content of U. S. soybeans is 1½% higher than Chinese soybeans. They said they are finding U. S. soybean oil very satisfactory for the manufacture of shortening and margarine and are looking forward to expanded use of the product. Desire was expressed for closer cooperation with the Council in the utilization of soybean meal in mixed feeds.

Belgium. There is a rapidly growing demand for the use of soybean oil as a salad oil, and the industry is anxious for the Council to help promote soybean oil at the consumer level.

France. Industry will be required to obtain supplies of oilseeds from the African colonies and to forego cheaper purchases in free markets. French people are accustomed to peanut oil as salad oil.

United Kingdom. There is keen interest in having an active office in the United Kingdom. Most UK supplies of soybeans and soybean products come from Canada.

Ireland. There is a small market for soybean meal which can be expanded. The only oilseed crushing plant in Ireland is not equipped to handle soybeans in an efficient manner.

J. L. Krider

J. Wesley Nelson

U. S. Specialists to European Seminars

THREE LIVESTOCK and poultry nutrition specialists, two of them from U. S. soybean processing firms, and the third from a state university, will take part in European livestock nutrition seminars in June and July as representatives of the Soybean Council of America, Inc. They will discuss the usage of soybean meal in European livestock and poultry rations.

Elton Johnson

They are:

J. Wesley Nelson, associate director of research, Cargill, Inc., Minneapolis.

Elton L. Johnson, head of the department of poultry husbandry, Institute of Agriculture, University of Minnesota.

J. L. Krider, vice president, Central Soya Co., Inc., Fort Wayne, Ind.

All three men will take part in the third annual nutrition seminar at Santander, Spain, July 4-10. Dr. Krider will act as a specialist on swine; Dr. Johnson, on poultry; and Dr. Nelson, on dairy cattle.

Drs. Johnson and Krider will take part in the nutrition seminar at Rome June 6-9. Dr. Johnson will attend a seminar in Israel June 30-July 1; and Dr. Krider, a seminar at Saragosa, Spain, June 20-21.

AMERICAN SOYBEAN ASSOCIATION

ASA-NSPA Meetings to Consider Soy Markets

FINAL AFTERNOON joint session of the American Soybean Association and National Soybean Processors Association conferences on Aug. 23 will be devoted almost entirely to marketing soybeans and soybean products, the ASA and NSPA committees have announced.

There will be a price forecast by a well-known farm economist—an annual feature of ASA meetings—followed by a panel discussion on factors that affect prices and price trends. Taking part in the panel will be a producer, a processor, an exporter, and a representative from government and the feed industry.

The joint meetings are being held at Hotel Peabody, Memphis, Tenn., Aug. 22-23, with both meetings being run at the same time. The two groups will meet jointly in the two afternoon sessions and will hold separate sessions in the morning.

The past several years the American Soybean Association convention has immediately followed the annual NSPA meeting, at the same hotel.

A joint annual banquet will be held Monday evening, Aug. 22.

The annual meeting of the National Crop Improvement Council advisory board will also be held at the same time at the Peabody, with sessions both mornings. The Council will present a review of its work at the closing session of the joint conference the afternoon of Aug. 23.

Annual business meeting of the American Soybean Association will be held the morning of Aug. 23.

Firms serving the soybean industry will offer exhibits of their products and services, as they have in the past.

The program committees of the two associations met at the Peabody recently to make preliminary program plans.

Aeroglide®

The World's Finest Grain Drier

- DRYING CAPACITIES — up to 2,000 Bushels Per Hour in Self-Contained Units
- DRIES—Corn, Wheat, Oats, Soybeans, Rye, Barley, Milo, Rice, Buckwheat, etc.
- FIRED BY—Fuel Oil, Natural or LP Gas

Aeroglide Corporation

810 GLENWOOD AVE. — RALEIGH, N. C.
TELEPHONE 2-6422

PUBLICATIONS

Urges Elimination of P. L. 480 Sales Abroad

ELIMINATION of P. L. 480 fats and oils sales abroad and tariff reductions appear to be indicated in order to move the increased supplies of fats and oils that will become available for export by 1974-75, according to an exhaustive publication on the structure of the soybean oil export market by Eric Berg, University of Illinois agricultural economist.

Dr. Berg believes a total soybean crop of 900 million to a billion bushels may be needed by 1974-75, based on estimates of the need for high-protein feeds, an annual export of 125 million bushels of soybeans and other factors.

"If estimates are substantially correct, the need for exports will steadily increase, and by 1975 9.4 to 12.1 billion pounds of soap fats should be available for this purpose —4.9 to 7.6 billion pounds more than the average during the 1955-57 marketing years.

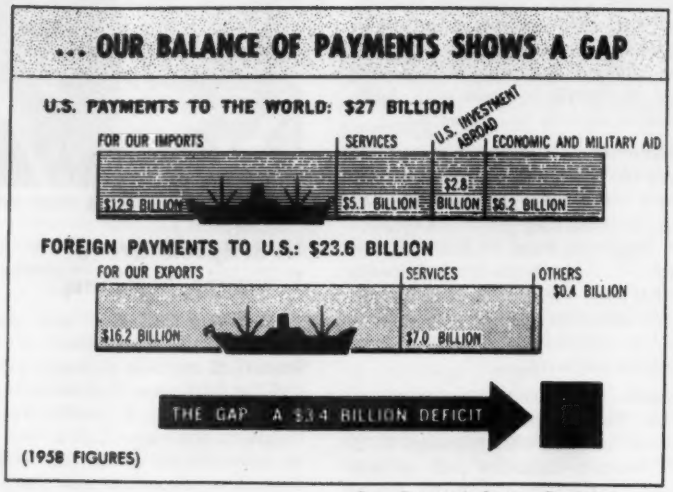
"Future increase in soybean oil exports of the magnitude needed because of the developing animal products industry in the United States must in large measure be made to the less developed countries of non-communist Asia, Africa, and Latin America. These countries, however, suffer from a chronic lack of foreign exchange. If exports to them are to be greatly expanded, the United States must either relax its import controls in order that these countries may be able to earn the required foreign exchange by exporting to the United States, or else the United States must subsidize exports to these countries."

The chief advantages to be gained from eliminating fats and oils exports under P. L. 480 and establishing a uniform subsidy of free prices would be to increase the consumption of fats, oils, and oilseeds in the less-developed countries and not just in countries that qualify for sales under P. L. 480, says Dr. Berg.

Lower export prices would also tend to restrict production in other producing countries. Encouraging consumption of oilseeds in the low-income countries would increase the demand for soybeans and soybean meal exports to those countries (primarily northwest Europe) that have depended on exports from the low-income countries.

Concerning tariffs, Dr. Berg's comment is: "Reduced tariffs on manufactures would enable relatively industrialized countries of northwest Europe and Japan to export more to the United States and thereby earn foreign exchange with which to import agricultural goods from the low-income countries of Asia, Africa, and Latin America. This would enable the low-income countries to import more (fats and oils) from the United States."

Structure of the Soybean Oil Export Market. By Eric Berg. Research Report AERR-30. Department of Agricultural Economics, Agricultural Experiment Station, Urbana, Ill.



—From Twentieth Century Fund, Inc.

Can Solve Payments Deficit by Exports

THE SOLUTION to the more or less chronic problem of deficits in the U. S. balance of payments (see graph) is to increase exports of U. S. products and not to slash imports and foreign aid, according to high officials in the government and leading business groups. In 1958, for instance, U. S. payments to the world totaled $27 billion compared with $23.6 billion in foreign payments to the United States.

The way out is expansion of trade at home and abroad, and not through throttling trade by more restrictions.

Under Secretary of State C. Douglas Dillon has emphasized the U. S. intention to increase exports. And he and other officials have been asking our allies, especially Great Britain, Japan, and Western European countries, to relax dollar discrimination and to share in economic aid to less developed countries.

U. S. Trade & Balance of Payments. United States-Japan Trade Council, 1000 Connecticut Ave., Washington 6, D. C.

See also: *Export Lag Widens Payments Deficit.* Foreign Commerce Weekly, March 28, 1960. U. S. Department of Commerce, Washington, D. C.

U. of Missouri Offers Soybean Yield Guides

RECENT University of Missouri studies provide guides that will help in obtaining the highest yield consistent with other objectives under Missouri conditions—such as spreading the harvest season, avoiding conflicts in handling other crops, and in timing marketing.

In normal years or when there is an abundance of moisture during the entire season, the late or full season varieties tend to give highest yields in Missouri. But when August and September are dry, the early varieties are best.

How Planting Date Affects Soybeans. Folder 68. By William J. Murphy, L. F. Williams, and Arnold Matson. University of Missouri Agricultural Extension Service, Columbia, Mo.

Treating Soils for Better Soybean Nutrition. Folder 77, March 1960. By C. M. Christy. University of Missouri Agricultural Extension Service, Columbia, Mo.

Commodity Futures Statistics, July 1958-June 1959. Statistical Bulletin No. 256. Commodity Exchange Authority, U. S. Department of Agriculture, Washington 25, D. C.

SERVICE*

**A MARK OF CENTRAL SOYA*

The work of a dependable newspaper boy is taken for granted by his customers: They expect a neatly-rolled newspaper beside the doormat rain or shine.

The people of Central Soya . . . in every division . . . pride themselves on their performance. They value highly their customers' reliance on Central Soya SERVICE.

26TH YEAR OF FOODPOWER

CENTRAL SOYA COMPANY

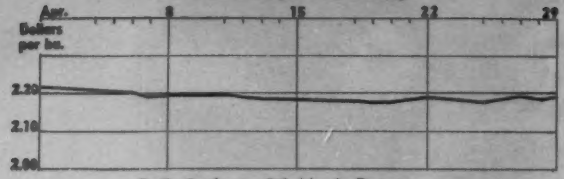
divisions of central soya:

MASTER MIX FEEDS
SOYA PROCESSING
SOYA CHEMURGY
GRAIN MERCHANDISING

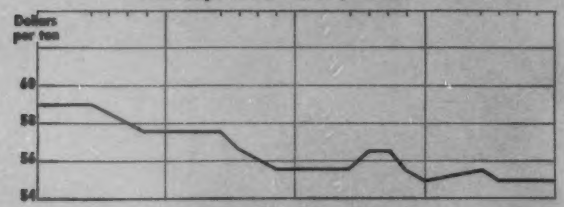
CENTRAL SOYA COMPANY, INC.
EXECUTIVE OFFICES: FORT WAYNE, INDIANA

DAILY MARKET PRICES

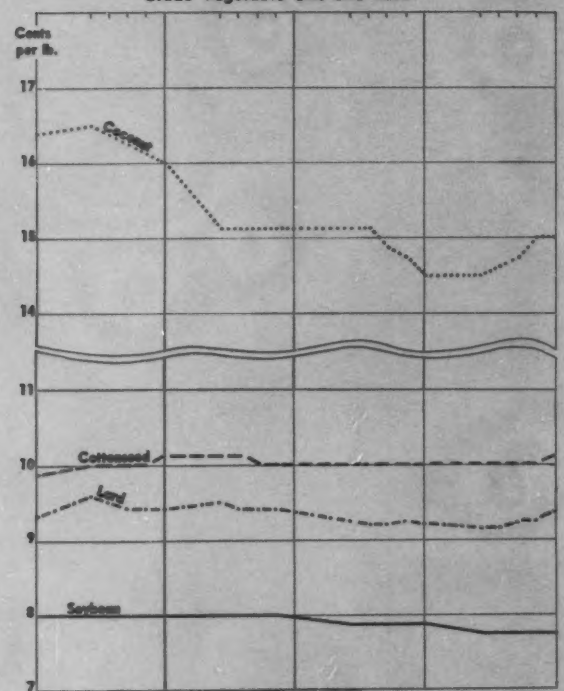
No. 1 Cash Soybeans, Chicago



Bulk Soybean Oil Meal, Decatur

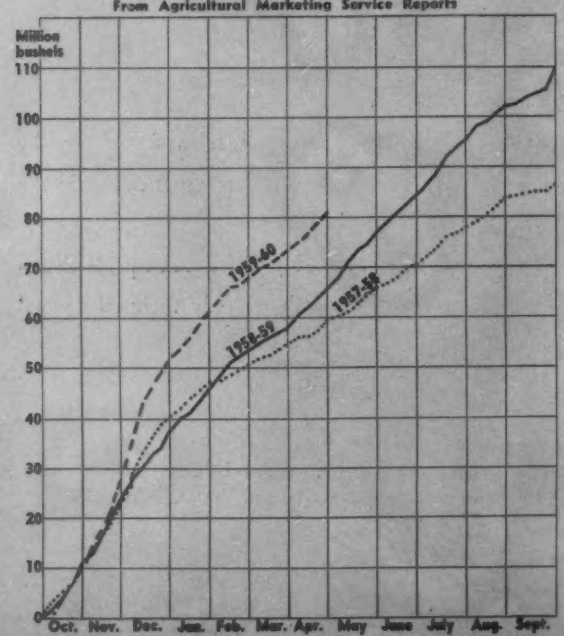


Crude Vegetable Oils and Lard



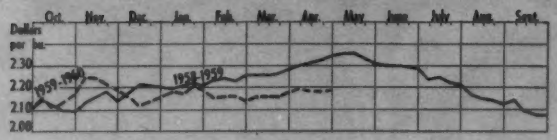
SOYBEAN INSPECTIONS FOR EXPORT, CUMULATIVE YEAR BEGINNING OCT. 1, 1957, 1958, 1959

From Agricultural Marketing Service Reports

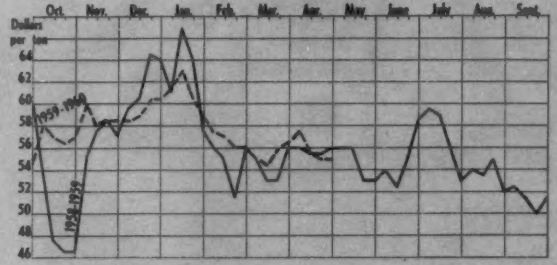


TRENDS AT A GLANCE (Weekly Close)

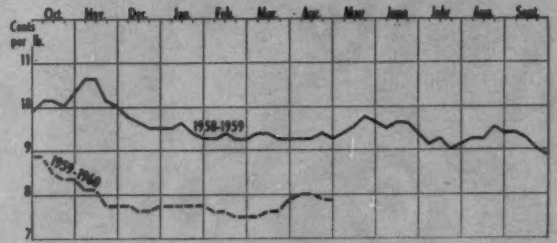
No. 1 Cash Soybeans, Chicago



Bulk Soybean Oil Meal, Decatur



Crude Soybean Oil, Tankcars



CASH PRICES APRIL 1960*

Apr.	No. 1 yellow soybeans Chicago	Bulk soybean meal Decatur	Soybean oil Decatur	Cottonseed oil Mississippi Valley	Coconut oil Pacific Coast	Lard Chicago
1	$2.21¼	$59.00	$.08	$.09⅞	$.16⅜	$.0930
2	Saturday					
4	2.20½	59.00	.08	.10	.16½	.0960
5	2.20¼	58.50	.08	.10	.16⅜	.0950
6	2.20	58.00	.08	.10	.16¼	.0942
7	2.19¼	57.50	.08	.10	.16⅛	.0942
8	2.19¾	57.50	.08	.10⅛	.16	.0940
9	Saturday					
11	2.19¾	57.00	.08	.10⅛	.15⅞	.0952
12	2.19	56.50	.08	.10⅛	.15⅞	.0942
13	2.18½	56.00	.08	.10	.15⅞	.0940
14	2.18½	55.50	.08	.10	.15⅞	.0942
15	Good Friday					
16	Saturday					
18	2.17¾	55.50	.07⅞	.10	.15⅞	.0925
19	2.17½	56.50	.07⅞	.10	.15⅞	.0920
20	2.17¼	56.50	.07⅞	.10	.14⅞	.0920
21	2.17¾	55.50	.07⅞	.10	.14¾	.0925
22	2.18½	55.00	.07⅞	.10	.14½	.0920
23	Saturday					
25	2.17½	55.50	.07¾	.10	.14½	.0915
26	2.18	55.00	.07¾	.10	.14⅝	.0915
27	2.19	55.00	.07¾	.10	.14¾	.0925
28	2.18	55.00	.07¾	.10	.15	.0925
29	2.18⅞	55.00	.07¾	.10⅛	.15	.0937

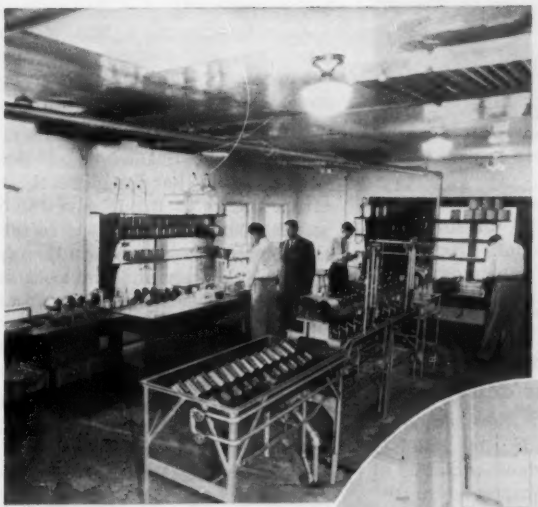
* From Wall Street Journal, Chicago.

1958 AND 1959 SOYBEAN CROPS

	1959	1958
Total soybeans placed under price support as of Mar. 31	52,366,000 bu.	139,760,000 bu.
Total soybeans withdrawn from support as of Mar. 31	3,592,000 bu.	6,978,000 bu.
Total remaining under support	48,774,000 bu.	132,779,000 bu.
Soybeans crushed Oct. 1-Mar. 31	204,282,090 bu.	208,107,000 bu.
Total soybeans inspected for overseas export plus lake shipments to Canada Oct. 1-Apr. 22	81,596,928 bu.	67,788,006 bu.
Balance on hand Apr. 1 for processing, export or carryover	283,405,982 bu.	295,635,000 bu.

Serving The Soybean Industry Since 1935

7 - Chemical Laboratories to serve you.

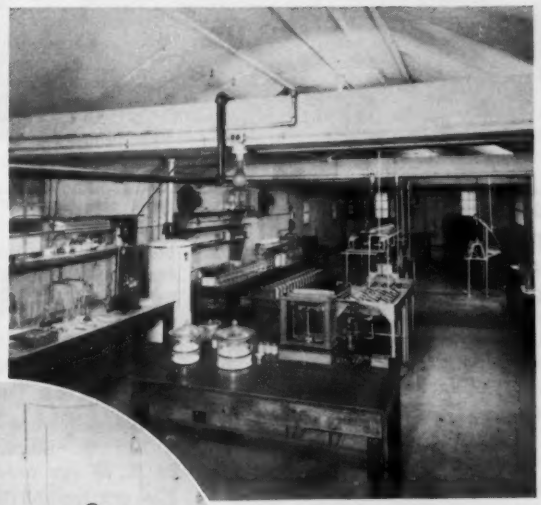


Our Chicago laboratory is equipped with the most modern equipment for refining soybean oils; soybean products and feeds.

CHICAGO 19, ILL.
1526 East 75th St.

DES MOINES, IOWA
1514 High St.

CAIRO, ILL.
4007 Sycamore St.



Our Des Moines laboratory has the latest equipment for refining oils; soybean products and feeds.

Our Oil Refining Department at Memphis has a capacity of 150 refinings daily. We also are equipped to analyze soybean products and all types of feeds.

LITTLE ROCK, ARK.
412 W. 7th St.

CLARKSDALE, MISS.
75 Sunflower St.

WILSON, ARK.
7 Union St.

Specializing in Marine Surveying and Inspection at Chicago Port

WOODSON-TENENT LABORATORIES

Official Chemists for the Chicago Board of Trade
Official Chemists for National Soybean Processors Association

MAIN OFFICES: 265 SOUTH FRONT ST. MEMPHIS, TENN.

GRITS and FLAKES . . . *from the World of Soy*

NEW elevator of Continental Grain Co. with vessel and barges at dock.

Continental Grain Opens New Elevator

Start of operations of the new export elevator of **Continental Grain Co.** at the Port of New Orleans was marked by the annual meeting of the company at the Port, with 50 executives in attendance.

The new elevator, with total capacity of 3 million bushels, is equipped with the most modern equipment for loading ocean vessels and for unloading freight cars and barges. Continental is one of the world's largest grain exporting organizations.

"The New Orleans elevator was built in recognition of the need for enlarged export facilities in the United States to handle the increasing volume of grain moving into world markets," stated Michel Fribourg, president of Continental.

As a further step in its expansion program, Continental is building a river elevator at Savage, Minn., near Minneapolis, with total capacity of 5 million bushels. It is expected to go into operation this October, orginating barge shipments on the Mississippi River system.

Other Continental port elevators are at Boston, Norfolk, Va., Galveston and Houston, Tex., Portland, Ore., and Longview, Wash.

Kurt Horn is vice president in charge of Continental's New Orleans operations. The company has offices at 810 Richards Building.

Aeroglide Elects Bunn Vice President

Announcement of the election of Julian W. Bunn, Jr., of Raleigh, N. C., as vice president in charge of the engineering department of the **Aeroglide Corp.** was made by President James F. Kelly.

Mr. Bunn, a native of Raleigh, has served as head of Aeroglide's development engineering section since he rejoined the company in February 1956.

Julian W. Bunn, Jr.

Mr. Bunn had previously been associated with Aeroglide, leaving the firm in 1953, to become plant manager, production engineer and secretary-treasurer, for Aeronautical Electronics.

Previous connections included General Electric Co. and General Air Conditioning Co. of Raleigh.

President Kelly pointed out that Aeroglide "is strongly engineering-design oriented" and cited the designation of Mr. Bunn as vice president in charge of the company's engineering department as "indicative of the importance attached to this phase of our operation."

Aeroglide Corp., a firm of engineers and manufacturers, produces equipment for the grain and produce industries.

R. J. Brown Co. has opened a new bulk plant in Dallas, Tex., made necessary for handling greatly increased sales of Bronoco petroleum solvents and chemicals, and to serve the company's customers in the area. Vance J. Bandreau has been appointed to the R. J. Brown sales organization and will be in charge of the new plant. He will also cover the immediate Dallas area.

Robert E. Woodward, of the **Ralston Purina** product control department, has been named manager of the department. He succeeds Claude L. Welch who died unexpectedly Mar. 1. Mr. Woodward, who joined Ralston Purina in 1946, has been manager of the formula division of the control department since 1949.

Jacobson Machine Works, Minneapolis, Minn., is preparing to observe its 50th anniversary. Plans include sales meetings and an open house for dealers, suppliers and customers.

E. Ray Siler, treasurer of the **Ralston Purina Co.** since 1946, has announced that he is retiring next Oct. 1 to travel and devote more time to various youth projects in which he has been interested for many years. He joined Ralston Purina Co. as assistant to the treasurer in 1942.

A new bulk feed distribution plant has been completed and put in service at Jasper, Ind., by the **A. E. Staley Manufacturing Co.,** Decatur, Ill. The new facility will serve as a pickup point for Staley dealers in southern Indiana and permit on-the-farm delivery of Staley's feeds.

Kenneth W. Keys, Jr., has been appointed a sales representative for **American Mineral Spirits Co.** He will represent Amsco in the Ohio Valley division covering western and southern Ohio and West Virginia and Kentucky. He will make his headquarters at Amsco's office at 2144 Riverside Drive, Columbus 21, Ohio.

After an absence of 12 years, Morse M. Johnson returns to the

WHEN YOU NEED

TANK CARS

CALL

O. E. LINSIN, INC.

8465 Halls Ferry Road **St. Louis 15, Mo.**

Phone: EVergreen 1-6135

Cars Furnished On Lease Or Trip Basis

"35 YEARS IN ST. LOUIS"

Prater Pulverizer Co. as Michigan representative with Wolverine Elevator Service Co., Chesaning, Mich. He has had 20 years experience in the feed processing equipment business.

Lloyd H. Stringham, manager of the **Ralston Purina** plant at Whitby, Ontario, has been appointed manager of the company's new plant at Clarkson, Ontario, which is expected to commence operation about July 15. T. E. Barnes, Chow production manager at Purina's Davenport, Iowa, plant, will become superintendent at Clarkson. James M. Mighton, credit manager at the Woodstock plant, will become manager at Whitby.

Farmers Cooperative Association, Ralston, Iowa, processor, will build 1 million bushels additional storage at Jefferson, to double the capacity of the Jefferson plant. The 107-feet-wide-by-364-feet-long Behlen steel building is being erected by the Shriver-Van Horn Co., Jefferson, Iowa.

The Nashville, Tenn., area is the latest to be served by a sales office and distribution terminal of **American Mineral Spirits Co.** at 2315 Clifton Ave. Daniel A. Caprario, who joined Amsco as a sales trainee in 1954, will be manager of the Nashville office. Amsco has similar facilities at Greenville, Miss.; Charlotte and Wilmington, N. C.; Atlanta; Jacksonville; Pensacola; Mobile; and Birmingham.

Allan E. Peyer, Canton, Ohio, has joined **Archer-Daniels-Midland Co.** as an assistant to Victor P. Buell, vice president and director of marketing. Mr. Peyer, formerly new products planning manager for the Hoover Co., will be engaged in market research, market and economic analysis, and long-range planning at ADM.

Southern Bearings Service, Inc., Memphis, Tenn., and Little Rock, Ark., has expanded its operations by merging with the Dixie Bearings, Inc., to cover the entire South, announces Robert E. Neiman, manager. "Our personnel and nationally known lines will remain the same," he said. "The only change is that we will be known as Dixie Bearings, Inc." Dixie Bearings has 17 stores in the following states: Florida, Georgia, Kentucky, Louisiana, North and South Carolina, Virginia, Tennessee and Arkansas.

C. B. Gilliland, head of the special crops section, marketing economics research division, Agricultural Marketing Service, U. S. Department of Agriculture, Washington, D. C., has been transferred to staff specialist commodity economics, product and process evaluation staff, office of administrator, Agricultural Research Service, USDA.

W. B. Saunders and M. D. Wyard have been appointed to new positions in the grain division of **Cargill, Inc.,** Minneapolis. Both are assistant vice presidents employed at Cargill's headquarters office at Wayzata. Mr. Saunders has been grain sales manager, and becomes deputy division head in charge of operations. Mr. Wyard has been administrator for grain division branch offices, and becomes deputy division head in charge of administration.

C. T. Mullan was elected vice president, meal sales, **Honeymead Products Co.,** Mankato, Minn., at the semi-annual meeting of the board of directors. He has been with Honeymead in meal sales since 1954.

Jack Reeves has been named sales manager and Ed Widner manager of the **Pillsbury** feed division's new plant at Jasper, Ala. The plant will be in operation early this spring. Reeves transfers from Gainesville, Ga., and Widner from Nashville, Tenn.

LAUHOFF SOYA CO.

How Soybeans Have Grown!

Take just a moment's time to consider the remarkable growth of the soybean industry through the last quarter-century, and its practical meaning:

TO THE UNITED STATES OF AMERICA—It shifted our country from dependence on imports to the largest exporter of fats and oils in all the world. Give major credit to the soybean!

TO THE AMERICAN FARMER—It means an annual cash income of more than one billion dollars, and a profitable market for the output of more than twenty million acres of cropland—without government controls; and the ability to divert acreage from chronic surplus crops.

TO THE CONSUMER—It has meant freedom from reliance on uncertain import supplies to meet oil and fat needs, and abundant supplies at reasonable prices of a most important healthful, high-energy food—soybean oil.

TO LABOR—It has brought millions of man-hours of work, at good wages.

We are proud to be a hard-working factor in the growth of this great industry.

LAUHOFF SOYA CO.

DANVILLE, ILLINOIS

Phone: Hickory 6-4770

NEW PRODUCTS and SERVICES

PLANTERS. A new and versatile line of 4-row toolbar planters is being introduced for 1960 by J. I. Case Co. They are designed for quick attaching to Case Snap-lock Eagle Hitch and most other three-point hitch tractors.

Available in nine different units with rigid or flexible beams, the D series toolbar planters have a wide choice of equipment for planting most row crops. Toolbars are available in 78-, 134- and 164-inch lengths.

For further information write Soybean Digest 5f, Hudson, Iowa.

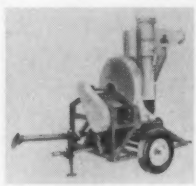
SEMI-PNEUMATIC TIRES. Use of semi-pneumatic rubber tires can speed up and improve germination, produce better stands, boost yields, help maintain timetables and reduce labor output, says Ohio Rubber Co.

Big advantage of semi-pneumatic tires is their self-cleaning action. In these tires, rubber's natural flexing quality is maximized through a special design to throw off excessive buildup of moist soil which otherwise seriously affects the proper working depth of equipment.

Extensive studies show semi-pneumatic press wheel and seed press tires utilize existing moisture conditions to insure good germination and high emergence.

For further information write Soybean Digest 5d, Hudson, Iowa.

GRAIN CONVEYOR. A new mobile pneumatic grain conveyor, the 1000 series Power Take-Off Vac-U-Vator manufactured by Dunbar-Kapple Inc., provides country grain dealers and large grain farmers with economical, flexible, and versatile grain movement by air.

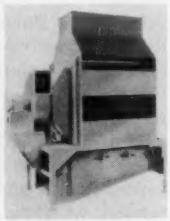


Designed to operate directly from a 50 HP (three and four plow) tractor, the PTO Vac-U-Vator is mounted on a two-wheel chassis, and can be easily towed from one place of operation to another.

The compact, yet powerful unit moves up to 1,200 bushels of grain per hour.

For further information write Soybean Digest 5b, Hudson, Iowa.

PELLET COOLING. A completely new concept in pellet cooling and scalping is being introduced by Ross Machine & Mill Supply, Inc.



The new T-R Cascade Cooler and Scalper completely eliminates many disadvantages of earlier machines. The pellets flow over a series of triangular cascades arranged within the cooler body. The cascades are made of perforated metal sheets and excessive dust is immediately removed by the exhaust system. Because of the internal arrangement of the triangular cascades, the pellets are inverted regularly, and complete even cooling is obtained.

Cleaning time and down time maintenance operations are kept at a minimum. The unit starts on first pellets, does not have to be full before starting, hence cooling of first and last pellets is assured.

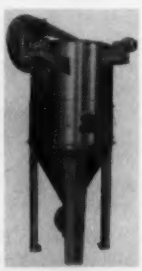
For further information write Soybean Digest 5e, Hudson, Iowa.

CULTIVATOR. Allis-Chalmers has announced the 600 series six-row front-mounted cultivators for its D-17 tractor, and as companion equipment to the recently introduced six-row Row-Flex planters.

The new cultivators have six-row capacity—up to 100 acres a day—and four-row convenience. A boom and turn buckle lifts the big three-row sections into position for convenient "swing-in" quick hitching.

For further information write Soybean Digest 5a, Hudson, Iowa.

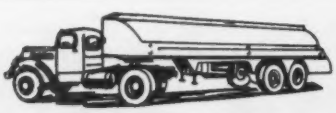
DUST FILTER. Latest addition to the line of dust control equipment manufactured by the Day Co. is an improved design "RJ" dust filter.



The most basic design change in this dust filter is a new, simplified method for maintaining the porosity of the filtering media. The filter has also been improved by the addition of a reverse air pressure blower.

The Day RJ filter is available in five sizes ranging in capacity from 285 to 6,400 cubic feet of air per minute.

For further information write Soybean Digest 5c, Hudson, Iowa.

Ship By 

TANK TRUCK

SOYBEAN OIL HAULING
OUR SPECIALTY

Hopper trucks for bulk soybean oil meal.

STILLPASS TRANSIT CO.

CONTRACT HAULERS

Inter and Intra State Tank Truck Operators . Edible Oils
4967 Spring Grove Avenue Mulberry 1-6102—1-6103
Cincinnati 32, Ohio If no answer call Grandview 1-5529

NELLIS

FEED COMPANY

Brokers

of Soybean Oil Meal

4110 Board of Trade Building

Wabash 2-7322
TWX 523

Chicago 4, Ill.

Eight minute "flip" speeds his grain to Europe. At Port Cargill, Minnesota, a giant boxcar is flipped on end, and 2,000 bushels of this farmer's grain are unloaded in just eight minutes. Over the rivers, lakes and seas of the world Cargill employs fleets of barges and ocean-going vessels to hurry the grain to distant ports. Through a complex network of transportation and storage, Cargill extends the arm of the American farmer to feed hungry mouths in hundreds of markets from Italy to India. And like the tides of the ocean, the benefits come flowing back and deposit themselves where they started . . . on the American farm. It's another example of how Cargill extends the reach of this important businessman — the American farmer.

CARGILL *EXTENDING THE REACH OF THE AMERICAN FARMER*

WASHINGTON DIGEST

See Pickup in Soybean Oil Exports

By PORTER M. HEDGE
Washington Correspondent for The Soybean Digest

"SOMEWHAT MORE favorable soybean oil export prospects during the last half of the 1959-60 season as compared with the first half will provide some strength to bean oil prices."

This is a quotation from the April issue of the Department of Agriculture's Demand and Price Situation just released. It expresses the note of confidence that has been apparent over edible oil exports in USDA for some time, though it should not be taken to mean that any big increases in oil prices are coming at this time.

USDA says in its report: "Current prospects indicate that prices of lard and cottonseed oil during April-September 1960 likely will average a little higher than in the first half of the marketing year, but still continue below the same months of 1959.

"The strengthening of cottonseed and lard prices because of seasonally declining supplies will help maintain soybean oil prices during the last half of the 1959-60 marketing year."

The lard purchase program has been discontinued after 61½ million pounds had been purchased for domestic distribution since last Oct. 22. Because of reduced hog slaughter and yield, USDA officials have reduced their estimate of lard production this season by another 50 million pounds.

USDA says in its late April report: "Soybean exports in 1959-60 are likely to set a new record of about 125 million bushels compared with 110 million last year. Most of the increase anticipated for the entire 1959-60 marketing year has occurred.

"Based in part on inspection data, exports from Oct. 1, 1959, through mid-April 1960 totaled 76 million bushels, 13 million above the same period the previous year. The increase is due mainly to larger shipments to Western Europe where the strong demand for both oil and meal makes soybeans attractive to crushers."

The report says shipments of lard and edible oils were up over 40% during the October-February period, and soybeans up more than 20%. It adds that total exports of food fats and oils (including the oil equivalent of soybeans) will be around 3.7 billion pounds against the record of 3.3 billion last season.

"A drop in exports of edible oils under P. L. 480 this year is expected to be compensated for by a sharp rise in dollar shipments. The total is likely to be at least as high as the 1,334 million pounds exported in 1958-59."

The P. L. 480 program has built up in the meantime to about 595 million pounds of edible oils with the addition of new agreements. The biggest one is a 99-million-pound program with Pakistan. Through mid-April 165 million pounds of the P. L. 480 exports had left the country. Of this 100 million pounds were soybean oil.

Domestic use of soybean meal during the first 5 months of the season is reported by USDA's April Feed Situation at 6% below use last year —3,550,000 tons this season against 3,753,000 tons a year earlier. Both exports and stocks of soybean meal are up from a year ago. Exports for October-January period 319,000 tons —up 50%. Stocks increased from 59,000 tons last October to 98,000 tons on Mar. 1. The latter is slightly higher than a year ago. Output of soybean meal this year is now estimated at 9½ million tons, about the same as last season.

Use of the five major oilseed meals was about 5% less than last year. Production in the first 5 months was a little above last year. Exports were twice those of 1958-59, but Mar. 1 stocks of 302,800 tons were 104,100 tons above stocks for the same date last year.

Total livestock numbers will be down this spring and summer from a year earlier due to reductions in hogs and poultry.

CCC Sales Policy

Taking trade practices into account, and considering the time period involved, CCC officials consider the minimum sales price set for soybeans to be about equal to the loan value of soybeans of comparable quality.

At the request of this column, CCC's General Sales Manager S. J. Meyers prepared the following explanation of the minimum sales price:

"When you look at the entire period April through September, the 20¢ markup does not provide a CCC sales price in excess of the loan value.

"First, one should consider the commercial practice of trading beans that grade No. 1 on moisture, damaged kernels, foreign material and contrasting classes. At one time CSS offices tediously computed these differentials between No. 2 grade and the higher quality trading basis on each lot sold. In the past several years, for reasons of convenience,

First Choice Wherever Grain is Handled

Your jobber has them, or write B. I. Weller Company, 327 South LaSalle Street, Chicago 4, Illinois.

(1) The logarithmic curve design loads easier . . . dumps cleaner . . . permits high speeds.
(2) Scientifically formed lip aids in greater cup capacity.
(3) Bolt-hole placement gives better cup balance . . . saves belting.
(4) Hyperbolic sideboard ends permit greater load capacity without "slopping."

CALUMET CUPS

these differentials have been averaged and called the "quality adjustment factor," which is a part of the 20¢ markup.

"Second, the higher of the loan rate plus 20¢ and the market price is the pricing basis. It is not the actual price. Trade discounts for grading factors are deducted in arriving at the actual sales price.

"Third, under the price support program, the producer is not required to pay the warehouse receiving charge. This means that when soybeans under loan are delivered to CCC the receiving charge of 6¼¢ per bushel is paid by CCC. In order to encourage redemption of soybeans under loan, allowance would have to be made in CCC's pricing for the amount of receiving charge.

"Admittedly, at the present time there is a modest gap between the 20¢ markup and the sum of the two factors mentioned above. However, this gap will disappear in the coming months as holders of soybeans become liable for additional storage and interest charges."

Nematode Problem

USDA says it should have nematode-resistant soybeans in the hands of growers within 5 to 6 years. This is testimony of Dr. Byron T. Shaw, head of the Agricultural Research Service, before the House Appropriations subcommittee on agriculture.

"We have nematocides that look promising in the laboratory," Dr. Shaw said, "and these are now being tried out in large scale field tests. If we are unable to achieve eradication of this pest, our best hope over the long term will be to develop resistant varieties of soybeans.

"Plant breeders have found resistant material and are pretty well along in transferring the resistance to commercial varieties." With appearance of the nematode in Illinois, eight states now have infestations of the pest.

Albert W. Kibby is new head of the Commodity Exchange Administration's Chicago office. He was promoted from the accounting staff, succeeding Charles E. Robinson, who has been appointed director of the compliance and trade practices division in Washington.

Central Soya Premiere

PRESENT at recent Washington premiere of the new Central Soya Co., Inc., motion picture, "Tomorrow's Foodpower," are left to right: George Prichard, Washington representative, National Soybean Processors Association; W. E. Huge, Central Soya vice president; R. G. Houghtlin, NSPA president; and D. W. McMillen, Jr., Central Soya president.

Add Illinois Farm To Regulated Area

A 20-ACRE FARM in Pulaski County, Ill., found infested with the soybean cyst nematode, has been added to the area regulated because of this pest. The order, issued by the U. S. Department of Agriculture, was effective Mar. 31.

A public hearing to consider this action was held in Springfield, Ill., on Jan. 26.

On the same effective date minor additions were made to the regulated areas in Arkansas, Kentucky, Missouri, North Carolina, and Virginia.

- MARKET STREET -

We invite the readers of THE SOYBEAN DIGEST to use MARKET STREET for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here. Rate 10c per word per issue. Minimum insertion $2.00.

FOR SALE—TWO 150-H.P.-HRT Erie City boilers. Complete with Detroit stokers, over-fire stokers, Union feedwater pumps, and all necessary accessories. Buyer to dismantle and move. Inspection welcomed. Phone 2325, H. S. Chittick, Swift & Co. soybean mill, Frankfort, Ind.

FOR SALE—SPECIAL PRICE ON 5,000 bushels of certified Ford soybean seed. Bert Benskin, Laurel, Iowa.

FOR SALE—ANDERSON Expellers and French screw-presses, cookers, driers, 5-high, 48-inch crushing rolls, 36-inch attrition mills, sewing machines, hammermills, cracking rolls, filter presses. Ray L. Jones, 1923 Hayselton Drive, Jefferson City, Mo.

ANDERSON & FRENCH PRESSES
AUXILIARY EQUIPMENT FOR
SOYBEANS AND OTHER
OIL SEEDS
PITTOCK & ASSOCIATES
GLEN RIDDLE, PA

ALL KINDS OF GOOD USED grain processing machinery. E. H. Beer & Co., Baltimore 24, Md. Phone Dickens 2-6606.

STEEL GRAIN BINS—WE HAVE some 9,000 and 12,000 bu. King Size Bins plus a few other sizes available. Write for particulars. Midwest Steel Products Co., 121B Railway Exchange Bldg., Kansas City 6, Mo.

GRAIN STORAGE TANK BARgain. Will sacrifice at 15¢ per bu. Steel must be moved for 100,000 bu. or more. Write Lee Smith, 1207 Commerce Trust Bldg., Kansas City, Mo.

FREE CATALOG! BULK BINS, farm automation equipment, elevator legs, screw conveyors, auger elevators, mixers and cleaners. Write to: Burrows Equipment Co., 1316-D Sherman Ave., Evanston, Ill.

SALE OR LEASE—FEDERAL bonded grain elevator 500,000-bu. capacity, ½ hopper bottom tanks and ½ Butler flat storage, completely equipped for drying, cleaning and storage with aeration and Zeleny temperature system, on U. S. Highway 70 near Memphis. Operating at maximum capacity storing government and farmer owned rice and soybeans for the past 7 years. Financially responsible buyer may name his terms. Gross for 1959 fiscal year in excess of $100,000. Recent appraisal and CPA operating figures available. Seller will lease back for 1 to 5 years at $25,000 per year. Grain Elevator Co., 1401 81 Madison Bldg., Memphis, Tenn., Tel. JA 6-6476.

FOR SALE—12½-TON TOLEDO dial suspension hopper scale, like new, 32-inch dial, model 2500. O. W. Meyer, Napoleon, Ohio.

CERTIFIED SOYBEANS—CHIPpewa, Harosoy, Hawkeye, Adams, Shelby, Clark. 7621. Turner Seed & Supply, Villa Grove, Ill.

PRATER 75 H.P. DUAL SCREEN pulverizer. Also 100-lb. Richardson meal scale and Union Special 12-inch belt sewing machine. Ray L. Jones, 1923 Hayselton Drive, Jefferson City, Mo.

IN THE MARKETS

STOCKS ON FARMS. Soybean stocks on farms Apr. 1 at 143 million bushels were record high for the date, 14% above the previous high a year earlier and double the 10-year average.

Soybean stocks on farms on Apr. 1. (1,000 bu.) Crop reporting board, AMS, USDA

	Average 1949-58	1959	1960		Average 1949-58	1959	1960
N. Y.	25	26	16	Md.	301	361	294
N. J.	130	135	286	Va.	518	363	835
Pa.	120	46	137	N. C.	878	1,357	1,055
Ohio	6,226	7,868	10,333	S. C.	423	1,066	1,835
Ind.	8,916	11,640	16,230	Ga.	121	146	195
Ill.	19,497	31,207	37,683	Fla.	[1]28	58	63
Mich.	873	2,255	1,782	Ky.	406	342	678
Wis.	311	800	633	Tenn.	407	1,297	1,569
Minn.	9,147	17,259	17,500	Ala.	85	163	315
Iowa	13,868	29,399	26,645	Miss.	812	1,288	2,077
Mo.	4,569	8,869	10,964	Ark.	1,102	3,723	4,259
N. Dak.	303	1,187	1,514	La.	93	86	132
S. Dak.	588	1,042	599	Okla.	47	121	86
Nebr.	353	1,669	2,223	Texas	8	83	181
Kans.	586	1,760	2,643	U. S.	71,013	125,815	143,003
Del.	270	199	241				

[1] Short-time average.

STOCKS. Soybean stocks of 310 million bushels in all storage positions on Apr. 1 were the second largest of record for the date being exceeded only by the 324 million bushels on hand a year earlier. Farm and terminal stocks were higher than a year ago but these increases were more than offset by smaller stocks in interior mills, elevators, and warehouses, CCC bins and oilseed processing plants.

Apr. 1 stocks indicate a disappearance during the 6-month period, October 1959-March 1960, of 290 million bushels from a supply of 600 million bushels (carryover of 62 million plus 1959 production of 538 million bushels). During the period known disappearance amounted to about 287 million bushels. Crushings (October-March) totaled 204 million bushels, about 6 million bushels of 1959-crop soybeans were crushed before Oct. 1, 75 million bushels were exported and feed and loss were estimated at about 2 million bushels.

Stocks of soybeans, Apr. 1, 1960 with comparisons (1,000 bu.)

	Apr. 1 av. 1949-58	Apr. 1 1959	Jan. 1 1960	Apr. 1 1960
On farms[1]	71,013	125,815	198,393	143,003
Terminals[2]	10,973	26,839	40,512	33,731
Commodity Credit Corp.[3]	85	1,895	327	159
Processing plants[5]	47,918	73,993	104,623	64,803
Int. mills, elev. and whses.[1 4]	29,977	95,956	110,248	68,043
Total	159,965	324,498	454,103	309,739

[1] Estimates of the crop reporting board. [2] Commercial stocks reported by grain division, AMS, at 44 terminal cities. [3] Owned by CCC and stored in bins or other storages owned or controlled by CCC; other CCC-owned grain is included in the estimates by positions. [4] All off-farm storages not otherwise designated, including merchant mills. [5] Firms reporting crushings and stocks of soybeans to the Bureau of the Census.

Soybeans—total and off-farm stocks, Apr. 1 and Jan. 1 (1,000 bu.)

	Off-farm total[1]			Total all positions[2]		
	Apr. 1 1959	Jan. 1 1960	Apr. 1 1960	Apr. 1 1959	Jan. 1 1960	Apr. 1 1960
Ohio	15,563	20,185	13,172	23,431	33,197	23,505
Ill.	51,579	56,423	34,324	82,786	109,179	72,007
Minn.	20,783	24,516	17,679	38,042	47,016	35,179
Iowa	36,960	43,679	29,500	66,359	76,034	56,145
Mo.	11,421	.....	.....	20,290	.....	.....
S. Dak.	.....	938	519	.....	1,726	1,118
N. C.	2,737	4,240	3,572	4,094	6,062	4,627
Tenn.	13,449	13,531	7,080	14,746	15,528	8,649
Miss.	.....	9,843	4,880	.....	14,412	6,957
Ark.	11,722	16,727	10,362	15,445	25,246	14,621
Other*	34,469	65,628	45,648	59,305	125,703	86,931
U. S.	198,683	255,710	166,736	324,498	454,103	309,739

* Other states and unallocated, to avoid disclosing individual operations. [1] Includes stocks at interior mills, elevators and warehouses, commercial stocks reported by grain division, AMS, at terminals and those owned by Commodity Credit Corp. which are in bins and other storages under CCC control. [2] Off-farm total plus farm stocks.

PROCESSING OPERATIONS. Reported by Bureau of the Census for February and March 1960.

Primary products except crude oil at crude oil mill locations: Production, shipments and transfers, and stock, March 1960-February 1960 (1,000 tons)

	Production		Shipments and transfers		Stocks end of month	
	March 1960	February 1960	March 1960	February 1960	Mar. 31, 1960	Feb. 29, 1960
Soybean:						
Cake and meal	779.1	697.3	787.2	698.5	85.9	94.0
Millfeed (hull meal)	13.6	11.6	14.0	11.0	3.6	4.0

Soybeans: Net receipts, crushings, and stocks at oil mills, by states, March 1960-February 1960 (1,000 tons)

	Net receipts at mills[1]		Crushed or used		Stocks at mills	
	March 1960	February 1960	March 1960	February 1960	Mar. 31, 1960	Feb. 29, 1960
U. S.	543.9	587.4	1,037.3	919.9	1,944.1	2,437.5
Arkansas	11.2	6.7	14.0	18.2	100.7	103.5
Illinois	185.2	174.8	315.9	262.6	313.8	444.5
Indiana	[2]	[2]	104.4	80.2	[2]	199.7
Iowa	148.1	106.3	163.5	162.5	356.5	371.9
Minnesota	49.4	52.9	87.4	72.3	85.2	123.2
Mississippi	[2]	[2]	37.0	31.0	110.4	[2]
Missouri	[2]	16.0	[2]	[2]	[2]	[2]
Nebraska	[2]	[2]	[2]	[2]	[2]	[2]
North Carolina	4.0	9.1	14.4	13.1	69.2	79.7
Ohio	30.4	56.0	82.7	82.2	208.5	260.8
Tennessee	32.7	60.9	81.1	77.4	165.6	214.0
All other	82.9	104.7	136.9	120.4	534.2	640.2

Note: Detail figures may not add to totals because of independent rounding. [1] Net receipts for each state are derived from the quantity of beans crushed and net change in stocks. [2] Included in "All other" to avoid disclosure of figures for individual companies.

Soybean products: Production and stocks at oil mill locations, by states, March 1960-February 1960

	Crude oil (millions of pounds)				Cake and meal (thousands of tons)[1]			
	Production		Stocks		Production		Stocks	
	March 1960	February 1960	Mar. 31, 1960	Feb. 29, 1960	March 1960	February 1960	Mar. 31, 1960	Feb. 29, 1960
U. S.	378.5	335.4	163.9	156.5	792.7	708.9	89.5	98.0
Arkansas	5.0	6.4	1.7	1.6	10.9	13.6	3.7	6.0
Illinois	118.9	98.6	54.5	49.7	238.7	198.8	28.8	25.2
Indiana	38.5	30.1	[2]	[2]	81.1	62.6	[2]	6.2
Iowa	59.2	58.1	24.0	19.1	129.4	128.2	16.5	17.7
Minnesota	29.3	25.6	30.0	34.3	63.9	56.4	5.5	4.7
Mississippi	13.6	11.5	3.0	4.1	28.4	23.9	5.6	3.3
Missouri	[2]	[2]	[2]	2.2	[2]	[2]	[2]	2.8
Nebraska	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]
N. Carolina	5.0	4.1	1.4	0.9	11.2	10.2	1.5	1.3
Ohio	30.8	30.9	6.8	7.1	62.7	63.1	7.7	7.7
Tennessee	29.4	27.8	5.8	6.1	58.0	56.3	5.4	8.3
All other	48.8	42.3	36.7	31.4	108.4	95.8	14.8	14.8

Note: Detail figures may not add to totals because of independent rounding. [1] Includes millfeed (hull meal). [2] Included in "All other" to avoid disclosure of figures for individual companies.

INSPECTIONS. Soybeans inspected by grades and percent, reported by Agricultural Marketing Service.[1]

	February 1960[2] 1,000 bu.	Pct	January 1960 1,000 bu.	Pct.	February 1959 1,000 bu.	Pct.	Oct. 1959-Feb. 1960 1,000 bu.	Pct.	Oct. 1958-Feb. 1959 1,000 bu.	Pct.
No. 1	3,624	20	4,748	20	5,596	28	44,075	18	56,447	24
No. 2	9,281	50	12,576	52	9,718	49	123,796	50	113,192	47
No. 3	3,531	19	4,446	19	3,020	15	58,079	23	47,111	20
No. 4	1,398	8	1,469	6	973	5	16,140	6	17,431	7
Sample	526	3	728	3	461	3	7,229	3	5,526	2
Total	18,360	100	23,967	100	19,768	100	249,319	100	239,707	100

[1] Carlot receipts have been converted to bushels on the basis that 1 carlot equals 1,750 bushels. [2] Of the February receipts, 1,750 bushels were black and the remainder yellow soybeans. Inspections of soybeans in February included 5,163,000 bushels as cargo lots, 1,416,305 bushels as truck receipts, and the balance as carlot receipts. Based on reports of inspections by licensed inspectors at all markets.

	March 1960[2] 1,000 bu.	Pct.	February 1960 1,000 bu.	Pct.	March 1959 1,000 bu.	Pct	Oct. 1959-Mar. 1960 1,000 bu.	Pct.	Oct. 1958-Mar. 1959 1,000 bu.	Pct.
No. 1	3,961	23	3,624	20	6,552	31	48,036	18	62,999	24
No. 2	8,034	48	9,281	50	9,873	47	131,830	50	123,065	47
No. 3	3,132	19	3,531	19	2,886	14	61,211	23	49,997	19
No. 4	1,138	7	1,398	8	1,129	5	17,278	6	18,560	7
Sample	484	3	526	3	702	3	7,713	3	6,228	3
Total	16,749	100	18,360	100	21,142	100	266,068	100	260,849	100

[1] Carlot receipts have been converted to bushels on the basis that 1 carlot equals 1,750 bushels. [2] Of the March receipts, 400 bushels were black and the remainder yellow soybeans. Inspections of soybeans in March included 3,448,000 bushels as cargo lots, 1,760,560 bushels as truck receipts, and the balance as carlot receipts. Based on reports of inspections by licensed inspectors at all markets.

Soybeans: Moisture content of inspected receipts at selected markets, Mar. 1-15, 1959 and 1960[1]

Percent of moisture content	1960 Thousand bushels	1960 Percent	1959 Thousand bushels	1959 Percent
11 and under	430	16	1,365	33
11.1 - 12.0	847	31	1,308	31
12.1 - 13.0	963	35	1,135	27
13.1 - 14.0	338	12	323	8
14.1 - 15.0	116	4	32	1
15.1 - 16.0	25	1	21	—
16.1 - 17.0	20	1	2	—
17.1 - 18.0	3	—	0	—
18.1 and over	2	—	0	—
Total	2,744	100	4,186	100

[1] Alton, Decatur and East St. Louis, Ill.; Cincinnati, Columbus and Toledo, Ohio; Decatur and Evansville, Ind.; Des Moines, Iowa; Louisville and Owensboro, Ky.; Minneapolis, Minn.; Mobile and Decatur, Ala.; Norfolk and South Norfolk, Va.; St. Louis, Mo.; and Chattanooga and Memphis, Tenn. On the basis of inspected receipts at 19 selected markets (see table above), only 16% of the soybean receipts inspected during Mar. 1-15 this year had a moisture content of 11% or less. This compared with 33% the same period a year earlier. On the other hand, 6% of the Mar. 1-15 inspected soybean receipts this year carried over 14% moisture as against only 1% during the comparable period a year ago.

EXPORTS. Preliminary data on U. S. exports of soybeans and soybean products for February 1960 with comparable data for February 1959 and cumulative totals for October-February in the marketing years 1958-59 and 1959-60, from Foreign Agricultural Service, U. S. Department of Agriculture.

	Unit	February 1959	February 1960	October-February 1958-59	October-February 1959-60
Soybeans	bu.	8,399,862	7,697,508	55,753,863	68,601,909
Soybean oil:					
Crude	lb	323,152	33,832,893	105,816,819	135,944,082
Refined but not further processed	lb.	1,172,824	6,517,738	14,255,626	26,244,272
Refined, deodorized and hydrogenated	lb.	8,673,181	16,065,325	145,172,911	42,130,219

Cottonseed and soybean oils and lard: Exports under Title I, Public Law 480 programs, and total exports, October 1954-February 1960 (million lbs.)

	Oct. 1-Sept. 30 1954-55	1955-56	1956-57	1957-58	1958-59	Oct. 1-Feb. 29 1958-59	1959-60
Exports under P. L. 480							
Cottonseed	117	291	55	97	141	1	57
Soybean	.....	279	495	592	747	226	83
Total oils	117	570	550	689	888	227	[1]140
Lard	.....	112	65	3	.....	.....	.....
Total exports:							
Cottonseed	710	611	423	248	404	86	[2]278
Soybean	50	557	807	803	941	264	[2]198
Total oils	760	1,168	1,230	1,051	1,345	350	476
Lard	528	663	530	394	535	204	[2]314

[1] P. L. 480 exports are reported according to the month in which the bill of lading was dated. [2]February exports estimated.

Soybean prices compared with market value of soybean oil and meal

	Soybean oil: Average price at crushing plant Cts. per pound	Soybean oil: Value from bu. of soybeans[1] Dollars	Soybean meal: Bulk price at Decatur Dollars per ton	Soybean meal: Value from bu. of soybeans[1] Dollars	Value of oil and meal from bushel of soybeans[1] Dollars	Market price No. 1 yellow soybeans Ill. pts. Dollars per bu.	Spread between soybean price and value of oil and meal Cents
Mar. 1960	7.7	0.85	55.85	1.31	2.16	2.08	8
Feb. 1960	7.6	0.84	57.50	1.35	2.19	2.06	13
Jan. 1960	7.7	0.85	61.50	1.45	2.30	2.11	19
Dec. 1959	7.7	0.85	58.70	1.38	2.23	2.08	15
Nov. 1959	8.0	0.88	58.50	1.37	2.25	2.09	16
Mar. 1959	9.3	1.02	55.10	1.29	2.31	2.17	14

[1] Based on assumption that a bushel of soybeans yields 11 pounds of oil and 47 pounds of meal. This table is for statistical comparison only. It does not reflect actual operating margins since prices are simple averages and do not take into account location differentials or actual purchases and sales of soybeans, soybean oil or soybean meal.

Title I, P. L. 480 exports for July 1959-March 1960

	March 1960 Metric tons	Unit	Quantity	July 1959-March 1960 Metric tons	Unit	Quantity
Cottonseed oil	786	lb.	1,733,000	61,461	lb.	135,497,000
Soybean oil	7,152	lb.	15,766,000	152,558	lb.	336,332,000

Foreign Agricultural Service, U. S. Department of Agriculture.

Soybeans, edible oils, and oilseed cakes and meals: U. S. exports, year beginning Oct. 1, 1957 and 1958, October-February 1958-59 and 1959-60

	1957-58	1958-59	October-February 1958-59[1]	October-February 1959-60[1]
	Million bushels	Million bushels	Million bushels	Million bushels
Soybeans	85.5	110.1	55.8	68.6
	Million pounds	Million pounds	Million pounds	Million pounds
Edible oils:				
Soybean	804.0	930.4	265.2	204.3
Cottonseed	248.0	404.2	85.9	296.6
Total	1,052.0	1,334.6	351.1	500.9
Oil equivalent of soybeans	938.9	1,208.6	612.2	753.2
	1,000 short tons	1,000 short tons	1,000 short tons	1,000 short tons
Cakes and meals:				
Soybean	300.0	512.2	243.8	373.2
Cottonseed	7.2	27.3	4.8	117.9
Linseed	5.9	31.2	12.5	47.2
Total[2]	316.3	581.0	262.4	538.4
Meal equivalent of soybeans	2,000.9	2,608.7	1,321.4	1,612.1

[1] Preliminary. [2] Includes peanut cake and meal and small quantities of other cakes and meals. Compiled from official records of the Bureau of the Census.

U. S. exports of principal agricultural commodities, calendar years 1958 and 1959[1]

	Unit	Year ended Dec. 31 Quantity 1958	Quantity 1959	Value 1958	Value 1959
		Thousands		1,000 Dollars	
Oil cake and oil-cake meal (2,000 lb.)	Ton	369	814	23,325	53,049
Soybeans, except canned (60 lb.)	Bu.	84,333	122,675	198,300	281,508
Soybean oil, crude, refined, etc.	Lb.	872,511	880,530	122,235	101,809
Cottonseed oil, crude, refined, etc.	Lb.	160,851	518,715	25,979	68,967

[1] Preliminary. Compiled from official records, Bureau of the Census.

SUEZ CANAL SHIPMENTS. Shipments of oil-bearing materials northward through the Suez Canal in January were one-fourth above the volume of January 1959. Larger shipments of soybeans from Communist China accounted for almost all of the increase.

Oilseeds: Suez Canal, northbound shipments by kind, January 1959 and 1960; October-January 1958-59 and 1959-60 (short tons)

	January 1959	January 1960	October-January 1958-59	October-January 1959-60
Soybeans[1]	77.2	134.5	202.8	392.4
Copra	58.4	46.3	199.5	240.3
Peanuts	16.5	11.0	54.0	36.4
Cottonseed	6.6	3.3	37.5	19.8
Flaxseed[2]	1.1	5.5	6.6	13.2
Others	15.4	29.8	66.1	94.8
	175.2	230.4	566.5	796.9

[1] To convert to bushels use 33.3 bushels per ton. [2] To convert to bushels use 35.7 bushels per ton. Source: Suez Canal Authority, Monthly Bulletin (Cairo, Egypt).

TERMINAL STOCKS. Agricultural Marketing Service's commercial grain stocks reports for close of business on Friday or Saturday preceding date of report (1,000 bushels).

	Mar. 29	Apr. 5	Apr. 12	Apr. 19
U. S. soybeans in stock and afloat at domestic markets				
Atlantic Coast	4,568	4,653	3,860	3,623
Gulf Coast	2,919	4,154	3,531	3,442
Northwestern	5,923	5,988	5,997	5,834
Lower Lake	12,608	12,348	11,820	10,750
East Central	5,299	5,037	4,724	4,512
West Central and Southwestern	4,026	3,904	4,146	4,077
Total current week	35,343	36,084	34,078	32,238
Total year ago*	28,900	28,354	27,435	26,249
U. S. soybeans in store and afloat at Canadian markets[1]				
Total current week	215	180	138	100
Total year ago	136	103	65	34
Total stocks in above positions				
Current week	35,558	36,264	34,216	32,338
Year ago*	29,036	28,457	27,500	26,283

* Revised. [1] For week earlier. U. S. soybeans reported include all in public elevators, including government-owned stocks at 45 principal markets. Does not include stocks in elevators attached to crushing plants and other processing facilities.

Primary receipts (1,000 bu.) of soybeans at important interior points for week ending:

	Mar. 25	Apr. 1	Apr. 8	Apr.15
Chicago	58	61	103	155
Duluth	4	5	11	53
Indianapolis	6	12	8	8
Kansas City	14	27	15	28
Minneapolis	124	183	169	168
Omaha	2	14	10	22
Peoria	8	10	12	11
Sioux City	—	—	20	—
St. Joseph	—	—	—	3
St. Louis	14	2	4	4
Toledo	50	40	73	43
Totals	280	354	425	495
Last year	425	605	445	471
CCC-owned stocks of soybeans in Chicago	1,137	1,139	1,139	1,139
Total Chicago soybean stocks	9,286	9,029	8,609	8,105

FACTORY USE VEGETABLE OILS for January and February 1960. Reported by Bureau of the Census (million pounds).

Selected edible oils: Production, consumption, and factory and warehouse stocks February 1960 and January 1960

	Cottonseed oil		Soybean oil	
	February 1960	January 1960	February 1960	January 1960
Production:				
Crude oils	209.0	221.6	335.4	370.5
Refined oils (once refined)[1]	150.9	151.1	287.7	287.9
Consumption in refining[1]	163.3	164.2	296.1	296.9
Consumption in selected edible and inedible products, [2]total	100.6	96.8	270.5	274.8
Consumption in edible products, total	100.3	96.4	254.4	257.7
Baking or frying fats	28.4	28.2	93.6	97.4
Salad or cooking oil	59.7	54.0	63.9	51.8
Margarine	9.9	11.7	94.4	105.4
Other edible products[3]	2.3	2.5	2.5	3.1
Stocks, end of month, [2]total	477.0	473.9	541.0	551.3
Crude oils	179.9	200.8	328.5	352.3
Refined oils	297.1	273.1	212.5	199.0

Total consumption of oils in each end product may exceed sum of detail since only major edible oils are shown separately. [1] Production of refined oil covers only once-refined oil. Degummed soybean oil is reported as crude oil. [2] Includes hydrogenated fats and other fats and oils "in process," (e.g. refined cottonseed includes stocks of stearin). [3] Includes confectioners fats.

PRICES. Average prices for soybeans received by farmers, effective parity, and support rates, reported by Agricultural Marketing Service (dollars per bushel).

Average farm price			Effective parity	Av. price as percent of parity	National average price support rate		
Mar. 15 1960	Feb. 15 1960	Mar. 15 1959	Mar. 15 1960	Mar. 15 1960	1960 crop	1959 crop	1958 crop
1.99	1.99	2.07	2.92	68	1.85	1.85	2.09

Average farm and parity prices from crop reporting board.

Soybean price support levels and season average prices received by farmers, 1949-60 crop years

	Level of support		Farm price per bushel		Level of support		Farm price per bushel
	Parity	Price per bushel			Parity	Price per bushel	
	Percent	Dollars	Dollars		Percent	Dollars	Dollars
1949	90	2.11	2.16	1955	70	2.04	2.22
1950	80	2.06	2.47	1956	75	2.15	2.18
1951	90	2.45	2.73	1957	70	2.09	2.07
1952	90	2.56	2.72	1958	70	2.09	2.00
1953	90	2.56	2.72	1959	64	1.85	2.02
1954	80	2.22	2.46	1960	64	1.85	

MELLORINE. Production of mellorine and other frozen desserts made with fats and oils other than milkfat in the United States during March was estimated at 3,560,000 gallons, the crop reporting board reports. This was 3% more than in March 1959 and 37% greater than the 1954-58 average for the month. Output the first 3 months of this year totaled 8,985,000 gallons—9% larger than in the first quarter of last year and 37% above the 5-year average for the period.

Production of "mellorine-type" frozen desserts, United States, 1960

	1954-58 average[1]	1958[1]	Estimated 1959	1960	Change from: 1954-58 av.	1959
	Thousand gallons				Percent	
January	1,861	2,238	2,325	2,535	+36	+ 9
February	2,097	2,335	2,505	2,890	+38	+15
March	2,604	2,759	3,440	3,560	+37	+ 3
Three-month total	6,562	7,332	8,270	8,985	+37	+ 9

[1] From enumerations.

PRICE SUPPORT. Quantities of 1959-crop soybeans put under support. From Agricultural Marketing Service.

Cumulative report 1959-crop soybeans: Amount under price support by states through Mar. 31, 1960 (bushels)

	Quantity of loans repaid			Quantity delivered
	Warehouse	Farm	Total	
Alabama	0	6,696	6,696	.....
Arkansas	39,344	363,820	403,164	.....
Delaware	0	0	0	.....
Georgia	426	11,940	12,366	.....
Illinois	627,681	249,945	877,626	.....
Indiana	127,526	187,011	314,537	.....
Iowa	215,174	239,746	454,920	.....
Kansas	7,952	20,528	28,480	.....
Kentucky	5,159	6,206	11,365	.....
Louisiana	0	0	0	.....
Michigan	1,859	3,235	5,094	.....
Minnesota	344,884	159,781	504,665	507
Mississippi	210,346	131,614	341,960	.....
Missouri	235,644	137,251	372,895	.....
Nebraska	6,012	1,339	7,351	.....
New Jersey	0	259	259	.....
New Mexico	0	0	0	.....
New York	0	0	0	.....
North Carolina	0	1,879	1,879	.....
North Dakota	35,235	25,504	60,739	.....
Ohio	63,918	44,379	108,297	.....
Oklahoma	9,476	663	10,139	.....
Pennsylvania	0	0	0	.....
South Carolina	2,787	42,439	45,226	.....
South Dakota	1,569	1,910	3,479	.....
Tennessee	0	6,691	6,691	.....
Texas	845	7,761	8,606	.....
Virginia	0	3,208	3,208	.....
Wisconsin	0	1,912	1,912	.....
Total	1,935,837	1,655,717	3,591,554	507

Soybeans: Price support activities as of Mar. 31, 1960 (1,000 bu.)

Total put under support	Loans repaid	Loans and purchase agreements outstanding	1958-crop	Reseal program 1957-crop	1956-crop	1955-crop
	1959-crop			1959-program		
52,366	3,592	48,774	13,629	(1)	(1)	(1)
	1958-crop			1958-program		
139,760	6,978	132,779	—	(1)	(1)	(1)

[1] No program.

NEW PLANT

NEW TYPE SOLVENT EXTRACTOR

especially designed for better service to the soybean industry in Southeastern States—all backed by sound reputation and long experience in handling of grains and soybeans. The first to be installed in this country by French Oil Mill Machinery Co.

SOUTHERN SOYA
CORPORATION
Estill, South Carolina
Telephone 2711

A Sales Record of More Than
15 MILLION
SUPERIOR
ELEVATOR CUPS
DP-OK-CC-V

For Better Results—Longer Life—More Capacity
"Elevator Cups Is Our Business, Not A Sideline"

K. I. WILLIS CORPORATION
MOLINE, ILLINOIS
Telephone Moline 4-6783

HERE'S IMPORTANT NEWS FOR SOYBEAN GROWERS

NOW YOU CAN BUY RANDOX® WEED KILLER AT A NEW LOW PRICE

Increased demand and large-volume production have reduced prices on RANDOX. You can band treat now for as little as $2.35 an acre! Every soybean farmer can now afford to control annual grassy weeds with RANDOX . . . the apply-as-you-plant weed killer used profitably by commercial seed producers and field bean growers for five years. ■RANDOX kills grasses as they sprout; gets rid of *in-row* weeds your cultivator can't touch . . . and weeds growing *in the row* reduce your bean yields the most. RANDOX saves labor, too. It cuts out at least one cultivation, saves rotary hoeing, and makes harvesting much easier. ■*Wet Season Protection, Too.* Because RANDOX kills off early-germinating grasses, it's good "insurance" for your crop when wet weather keeps your cultivator out of the fields. SPRAY IT—or—SPREAD IT! Randox controls: foxtails, annual bluegrass, barnyard grass, careless weed, cheat, crab grass, goose grass, purslane, carpetweed, stinkweed, pigweed. ■Before you plant this year, see your Monsanto Dealer for RANDOX at his new low price! *Monsanto Chemical Company, Organic Chemicals Division, Agricultural Chemicals Department, St. Louis 66, Mo.*

GROW MORE PROFITABLY
Monsanto
FARM CHEMICALS

UNIVERSITY MICROFILMS
313 N. FIRST ST.
ANN ARBOR, MICHIGAN

FIRST

IN TECHNICAL AID

AMSCO is first in sales, because AMSCO is first in technical aid. AMSCO representatives are fully experienced in solvent application and ready to help you with your solvent problems. Call for one of our solvent specialists at the AMSCO office nearest you, or write General Eastern Offices, Murray Hill, New Jersey.

AMSCO

AMERICAN MINERAL SPIRITS COMPANY

NEW YORK • CHICAGO • LOS ANGELES